Well, There's this TikTok: Adolescent Mental Health Literacy and Social Media Use in Aotearoa New Zealand

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Abstract

This thesis investigated whether mental health literacy (MHL) scores vary by rainbow status or wellbeing scores; how Aotearoa New Zealand (AoNZ) young people access and interact with MH messages and whether these behaviours vary by rainbow status or wellbeing scores; and whether access to and interaction with online mental health messaging predicts MHL. Adolescents (N = 306) aged 16-19 years old, living in AoNZ completed an online survey covering their demographics including sexual and gender identity, two measures of wellbeing, two measures of mental health literacy, and their social media use particularly related to mental health content. Descriptive statistics, chi-square analysis and regressions were used to analyse the data. Overall, the study provided promising results for MHL in AoNZ with a high level of recognition of anxiety and MHLS scores comparable with previous overseas studies. Rainbow participants had significantly higher MHLS scores, but there was no significant relationship between wellbeing status and MHLS scores. The young people in the sample are online every day, and 88.6% reported previously looking up mental health information (MHI) online. Furthermore, almost all participants reported having seen MHI while scrolling their social media feed, with Instagram and TikTok the most common applications for MHI, both while scrolling and actively looking. Rainbow participants access online MHI more than their non-rainbow peers, but there were no significant group differences in items related to interacting with MHI on social media. There were significant group differences in both accessing and interacting with MHI online and on social media by wellbeing status, with those with lower wellbeing more frequently accessing and interacting with online MHI. Finally, the data suggests that those with higher access or interaction with online MHI have higher MHL than those with lower access or interaction with MHI online. This thesis provides important insights into the behaviour of AoNZ young people engaging with mental health content online and on social media, particularly for Rainbow young people. This is the first study connecting the way teens use social media and online mental health information to mental health literacy, providing an important avenue to consider how teens are developing their mental health literacy.

Keywords: *Mental health literacy; social media; adolescent mental health; mental health literacy scale, LGBTQIA*

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1. Introduction

Aotearoa New Zealand (AoNZ) has long been experiencing a mental health crisis, with increasing rates of mental distress and long wait times for treatment over the past decade (Harvey, 2021; Spence, 2024). For young people, research shows worrying rising rates of depression and suicidality, with increased rates of foregone healthcare as young people fail to seek care when it is needed (Fleming et al., 2022). To reverse these trends, researchers and clinicians must find ways to connect those in distress, particularly young people, to the appropriate sources of help.

Adolescence is a time of particular risk for the development of mental health disorders (MHDs). When considering the age of onset of lifetime cases of diagnosed MHDs, half begin before age 11 and three-quarters before age 24 (Kessler et al., 2005). The longer these symptoms go untreated, the more likely the adolescent is to experience psychosocial disruptions to their education, family and friendship relationships, and possible disruption in their personality development (Callaly, 2014). To alleviate these consequences for adolescents in distress, teens need timely identification and interventions for their MHDs.

While many young people experience mental distress during adolescence and young adulthood, the number receiving mental health care remains low (Sawyer & Spence, 2012). Many young people do not seek help, or delay help-seeking, both of which can worsen their mental health outcomes. Researchers have highlighted improving help-seeking knowledge and attitudes, (such as where to find help and that asking for help is not weak) as well as improving access to services, as keys to improving help-seeking behaviour and service use. It may be, though, that traditional forms of help-seeking may not be as salient for young people as they are for older generations. Indeed, research with young people has suggested that they would approach friends, family, or the internet for help rather than professional services (Ratnayake & Hyde, 2019),

Social media has become ubiquitous, particularly for adolescents who are increasingly reporting using at least one social media platform “almost constantly” (Pew Research Center, 2022). While many researchers have focused on what impact social media use may have on mental health,

fewer have sought to understand what young people are learning on social media about mental health.

Today, mental health content is common on social media. Some clinicians and researchers report concerns about what people are learning about mental health on social media, and how they may be using that information to diagnose themselves or others (Mattoon, 2021). However, others are seeing an opportunity to use social media to provide robust, evidence-based medical information and education to the general public, including teens (Comp et al., 2021). The ability to share information quickly to a wide audience is a key benefit of social media, particularly the short video-based platform TikTok. Information shared includes information and resources created by professionals but also peer-to-peer information and support, which may be particularly attractive to those who may distrust the information from mainstream healthcare providers, or fear the consequences of asking for help (e.g. trans and gender diverse individuals; MacKinnon et al., 2021). Such information may provide important pathways to care for those who may otherwise avoid any formal sources of help.

Indeed, improving mental health literacy has been suggested as a mechanism to improve help-seeking and access to care for adolescents. Mental health literacy (MHL) refers to the "knowledge and beliefs about mental disorders which aid their recognition, management or prevention" (Jorm et al., 1997, p. 182). Although though widely measured overseas, there has been only one published study measuring the MHL of adolescents in AoNZ (see Tissera & Tairi, 2020). Additionally, there have been no studies investigating the link between young people's interactions with mental health content on social media and their level of mental health literacy. Given the increasing amount of mental health information found online, and the increasing reliance of young people on online resources, this is a timely area of research (see Tissera & Tairi, 2020).

My interest in both MHL and mental health content on social media leads me to my research questions for this thesis:

1. Do MHL scores vary by rainbow status or wellbeing scores?

2. How do AoNZ young people access and interact with MH messages and these behaviours vary by wellbeing scores or rainbow status?
3. Does access to and interaction with online mental health messaging predict MHL?

To answer these questions, I recruited adolescents aged 16-19 years old, living in Aotearoa New Zealand (AoNZ) to complete an online survey covering their demographics including sexual and gender identity, two measures of wellbeing, two measures of mental health literacy, and their social media use particularly related to mental health content.

Descriptive statistics, chi-square analysis and regressions were used to analyse the data.

1.1 A note on Terminology

Please note that I have chosen to use the term 'rainbow' to refer to the young people of diverse sexualities and gender identities discussed in this thesis, including lesbian, gay, bisexual, pansexual, transgender, nonbinary, and all other non-heterosexual and non-cisgender identities. 'LGBTQ+' may also be used interchangeably with 'rainbow'. When discussing specific studies in the literature, I have used the language of the study for accuracy. For example, if a study investigated the experiences of people identifying as lesbian, gay, and/or bisexual and used the acronym 'LGB', I also used the acronym LGB to describe the sample accurately.

This thesis is focused on young people in adolescence. Adolescence is the period of transition between childhood and adulthood, and while exact definitions and age ranges vary, it is generally accepted to be between 10-19-years-old (World Health Organisation, 2023). Within this thesis, the terms adolescents, teens, youth and young people are used interchangeably to describe this age group.

2. Literature Review

2.1 Mental Health and Adolescence

Many mental health disorders (MHDs) show median onset during adolescence (e.g. all anxiety disorders age 11, social anxiety age 13, obsessive-compulsive disorder age 19, Kessler et al., 2005; eating disorders age 15-19, Rapee et al., 2019). Others, such as depression, show a dramatic increase in onset during the adolescent years, though the median age remains around age 30 (Kessler et al., 2005; Rapee et al., 2019). Research suggests that specifying the age of onset for depression may be complicated by its episodic nature . Globally, one-third of people with mental health disorders experience their first symptom onset before the age of 14, and almost half before the age of 18 (Solmi et al., 2022). Worryingly, researchers have suggested the cross-sectional methods used in the existing research may underestimate the burden of disease (Costello et al., 2003; Menzies et al., 2020). In their longitudinal study (*n* = 1420, intake age 9-13 years), Costello et al. (2003) found that although on average 13.3% of the sample had a diagnosis at one time, three times that number experienced a mental disorder during the study period.

Troublingly, recent research highlights that youth mental health in AoNZ appears to be declining, with increased rates of mental distress noted in 2019 than in 2012 (Fleming et al., 2020). Further, the proportion of teens accessing health care in the past 12 months decreased and reported forgone health care (failing to seek care when it is needed) increased between 2012 and 2019 (Fleming et al., 2022). Concerningly, the research shows rising rates of depression and suicidality (Fleming et al., 2022; Menzies et al., 2020). The WHO-5 Well-being Index (Topp et al., 2015) measured wellbeing with only 69% of participants indicating they had good, very good or excellent wellbeing, which has worsened since 2007 (78%, OR 0.62, 95% CI 0.57-0.68, $p < 0.001$) and 2012 (76%, OR 0.70, 95% CI 0.64-0.77, $p < 0.001$) (Fleming et al., 2022). These findings are supported by the 2021/22 New Zealand Health Survey, in which 23.6% of young people (aged 15-24) experienced

high or very high levels of mental distress and 16.2% reported unmet need for professional mental health support (Ministry of Health, 2022)[1].

We also cannot ignore the impact that the Coronavirus disease 2019 (COVID-19) pandemic had on people's health and wellbeing, particularly tamariki (children) and rangatahi (young people) who were isolated from peers during some core developmental periods. While AoNZ saw relatively few deaths and serious illnesses in the early days of the pandemic, the unprecedented lockdowns and extensive news coverage of death and illness overseas made this a time of high stress and anxiety for many in our community. The impact on young people was recorded through increased calls to helplines such as Lifeline (Foon, 2020b) and Youthline (Basagre, 2021; Kronast, 2020) and digital mental health applications such as Just a Thought (Mahoney et al., 2021). The pandemic may have been particularly difficult for young people whose family home may not be a safe space for them, with police investigations of domestic violence and referrals to Women's Refuge increasing in the early weeks of the most restrictive (Level 4) lockdown (Foon, 2020a).

2.2 Unmet Needs and Untreated Illness

Despite high rates of mental distress, professional mental health support is only received by a small number of adolescents (Sawyer & Spence, 2012). In the United Kingdom, the 2017 Mental Health of Children and Young People (MHCYP) surveys reported that while 66% of young people (5-19) with a disorder obtained any professional help, this was most frequently a teacher (48.5%) with only 33.4% of young people visiting a primary healthcare specialist and 25.2% seeing a mental health specialist (NHS Digital, 2018; Radez et al., 2021). Sawyer and Spence (2012) posit that adolescent service attendance may be motivated or determined by parents or teachers, rather than the

[1]While not the focus of this study, the Youth19 data also highlights the equity gap between rangatahi Māori and their Pakeha peers with higher rates of depressive symptoms (28% compared to 20% respectively) and suicide attempts in the last 12 months (13% compared to 3%). Menzies et al. (2020) called these results "persistently inequitable" (p2) with outcomes for rangatahi Māori worse than their non-Māori peers across all waves of the Youth2000 surveys to date. These inequities flow through into adult statistics with Māori overrepresented in negative life outcomes such as higher suicide rate (Coronial Services of New Zealand, n.d.), reduced life expectancy, domestic violence and other experiences of violence, alcohol and drug addiction and prison.

adolescents themselves, making it more difficult to untangle the relationship between mental health problems and service attendance in epidemiologic studies.

Delays between symptom onset and treatment are common, and not just for adolescents. For many people experiencing mental distress and mental ill health, first contact with health professionals comes years after the first onset of symptoms (Jorm, 2012; P. Wang et al., 2007). The AoNZ results from the World Health Organization's World Mental Health Survey Initiative (P. Wang et al., 2007) suggest that only 12% of New Zealanders make treatment contact within the first year of symptom onset for anxiety, with 41.4% for mood disorders and only 6.3% for substance use disorder. The median durations of delay reported for AoNZ was 21 years (anxiety), 3 years (mood disorders) and 17 years (substance use disorder). Notably, Wang et al. (2007) also found that for each disorder, earlier age of onset was associated with a lower likelihood to make treatment contact.

The consequences of these delays between symptom onset and accessing treatment can be serious, with longer delays associated with poorer treatment outcomes (Ghio et al., 2014; Jorm, 2012; Kraus et al., 2019). Untreated MHDs can cause significant psychosocial issues for young people, impacting education, relationships with families and friends, drug and alcohol use, self-esteem, self-image, and personality development (Callaly, 2014). For example, adolescent anxiety is an important risk factor for adult psychiatric diagnoses of anxiety, mood, and substance use disorders and suicidal ideation (Doering et al., 2019). Further, childhood and adolescent anxiety disorders are associated with negative outcomes in adulthood including reduced life satisfaction, social and family impairment, educational underachievement, and poor work adjustment (Doering et al., 2019).Similarly, there is an overwhelming consensus in the research that there is a strong positive relationship between adolescent and adult depression (Johnson et al., 2018; Jonsson et al., 2011). While complicated by differences between episodic and chronic depression, the research is clear that youth with persistent depression symptoms experience worse adult outcomes, including workplace and academic performance, income and relationships (Copeland et al., 2021; Jonsson et al., 2011). Depression has

also been associated with physical health issues (e.g. metabolic syndrome) which can lead to cardiovascular disease and type 2 diabetes (Dunbar et al., 2008; Moradi et al., 2021)

2.3 Help-Seeking and Service Use

To address the problem of delayed or foregone treatment for MHDs, we must teach young people what symptoms to look for, and where to go for help. Improving access to care and information about common mental health challenges may be key not only to improving service use but also to the prevention of MHDs. Many researchers have approached this by investigating help-seeking: the process through which someone (a) experiences symptoms, (b) identifies them as a problem or concern, (c) forms an intention to get help, and (d) finally seeks help (McLaren et al., 2023; Tomczyk et al., 2020).

While a discussion on the models of help-seeking is outside the scope of this thesis, there are several used in the literature to understand help-seeking including the theory of planned behaviour (Ajzen, 1985), the transtheoretical model of behaviour change (Prochaska & Velicer, 1997) and Rickwood's help-seeking model (Rickwood & Thomas, 2012). Importantly, these models differentiate between help-seeking intentions (decisions to seek help), beliefs (attitudes towards help and those who require it), and behaviours (actions to seek help) and reflect help-seeking as a process, not a singular action, though the models differ on the number and nature of the stages in this process (Rickwood & Thomas, 2012).

A major area of interest in help-seeking research relates to the pathways to care, that is, who young people approach for help. Help-seeking and service use for adolescents are influenced by parents, teachers, and other adults (Fearing, 2024; Sawyer & Spence, 2012); however, pathways to help-seeking are complicated by the growing independence from adults and reliance on peers for advice during this developmental period. It is well established that young people are likely to turn to their peers for support when experiencing mental distress (Bradford & Rickwood, 2014; Cotton et al., 2006; Swords et al., 2011). Nevertheless, families remain important agents in the pathway to care for young people and play an influential role in help-seeking (MacDonald et al., 2018). Unfortunately,

many young people do not intend to seek help at all, particularly young men (Bradford & Rickwood, 2014).

Many factors have been identified throughout the literature as barriers to help-seeking for youth. In their systematic review, Radez et al. (2021) identified 53 studies reporting barriers and facilitators to professional service access for children and adolescents and categorised the factors influencing help-seeking. Individual factors appear in 96% of studies, including perceptions of help-seeking and mental health knowledge. Social factors, such as social stigma and embarrassment, were reported in 92% of studies. Perceptions of the therapeutic relationship, including confidentiality and trust of a stranger, were reported in 68% of studies. Finally, 58% of studies reported systemic and structural barriers or facilitators such as costs, availability, and logistics of access.

The Young Minds survey of 2,700 UK young people (up to age 25) highlights the difficulties faced by young people with only 6% of young people who had looked for support agreeing that there is enough support for young people with mental health problems in the UK and 10% agreeing it is easy for young people to find help (Young Minds., 2018, p. 6). Participants reported difficulty getting help from their school/college (31%) or general practitioner (29%), and delays between referral and assessment (61%) and assessment and treatment (32%). When asked what the barriers were, if any, to getting support for their mental health, 51% of youth reported not understanding what they were going through (Young Minds., 2018).

Research into barriers to help-seeking in the AoNZ context supports these findings, with researchers highlighting themes of unavailable and unfit services, long wait times, and high symptom thresholds before help is given (Holman & Williams, 2020; Kulshrestha & Shahid, 2022). Many patients report being given only a prescription, with little aftercare or therapy provided, and little consideration given to the systemic challenges being faced (Kulshrestha & Shahid, 2022).

The UK Young Minds survey highlights the importance of first step of help-seeking: identifying someone has a problem. Therefore, it follows that we need to understand what teenagers know about mental health and illness including- what symptoms of mental ill health look like. This

leads us to the concept of mental health literacy (defined below) and how this can help young people identify mental ill health in themselves and others, and appropriate sources of help.

2.4. Mental Health Literacy

Mental health literacy (MHL) was introduced in the literature by Jorm and colleagues (1997) when they first surveyed the general public to assess their ability to recognise MHD and their beliefs about effective treatments. Jorm et al. coined the term MHL and defined it as the "knowledge and beliefs about mental disorders which aid their recognition, management, or prevention" (Jorm et al., 1997, p. 182). This novel concept incorporated seven dimensions, named here and described in more detail below: recognising disorders, knowing where to seek information, knowing risk factors for disorders, knowing the causes of disorders, knowing options for self-help, knowing professional help is available, and attitudes that promote recognition or help-seeking. While later definitions have been proposed, this study follows the original definition proposed as this remains the most common definition used in the literature.

Jorm and colleagues were inspired by research into health literacy, which was itself defined as “the ability to gain access to, understand, and use information in ways which promote and maintain good health” (Jorm et al., 1997, p. 182). Health literacy was at the time being considered at a governmental level in investigations into the health of Australians, but there was no mention of mental health (Jorm, 2019). Jorm and colleagues sought to close this gap and therefore modelled his mental health literacy definition and research on the existing health literacy concept. Specifically, this definition reflects the focus on skills and knowledge for good health, and Jorm has suggested that MHL relates to knowledge connected to beneficial action (Jorm, 2019). Jorm also suggests that strong MHL needs to inform or relate to beneficial actions such as prevention, early intervention and treatment, rather than specific facts alone (Jorm, 2012).

Jorm’s original definition is still the most commonly used; however much of the research omits or condenses the original seven dimensions into knowledge and beliefs, or simply knowledge, without acknowledging the beneficial action requirement (Mansfield et al., 2020). Mansfield et al

(2020) found that only 45% of the studies in their systematic literature review defined the term MHL at all. As with many novel areas of research, a lack of consistent definitions and operationalisations has left the MHL literature fractured and complex, with vague definitions leading to measures that are unclear about the concept being assessed, or assessing only part of the concept, such as knowledge or stigma (Mansfield et al., 2020; Spiker & Hammer, 2019).

To date there has been a lack of theories or models presented around MHL; rather it has been introduced as a concept, repeatedly measured and with interventions designed, but little theory given as to how or why MHL works. In light of the conceptual confusion illustrated by the inconsistent definitions in the literature, Spiker and Hammer (2019) have suggested that MHL be considered a "multi-construct theory, rather than a multi-dimensional construct" (p 3). This would help separate the broad domains and acknowledge their complexity. Mansfield (2020) agreed, suggesting that by treating MHL as a multi-construct theory we can better understand the mechanisms for change.

2.4.1 Mental Health Knowledge

According to Jorm's original definition, MHL can be broken down into elements or dimensions, most of which reflect knowledge, with the final element addressing attitudes and beliefs. These elements of knowledge cover prevention, recognition (including assessing their severity), and treatment options for MHDs as well as when and where to seek help and information.

Knowledge about *prevention* relates to strategies or lifestyle factors that may reduce the risk of MHD (Jorm, 2019). Examples of prevention strategies include developing mental fitness and stress management strategies, maintaining a healthy diet and exercise, good sleep hygiene, making time for relaxing activities and nurturing healthy relationships (Jorm, 2019; Reichel et al., 2023; Yap et al., 2012). This area of MHL is particularly under-researched, as most studies to date have focused on the recognition and intervention of MHD, rather than knowledge about positive mental health or mental health promotion and maintenance (Bjørnsen et al., 2019; Mansfield et al., 2020). Where studies

have investigated prevention or positive MHL it is often regarding risk factors or causes of mental health disorders (Mansfield et al., 2020).

As noted earlier, lack of *recognition* of MHDs has been suggested as contributing to the delays in help-seeking (Jorm, 2019). Recognition is, therefore, a key dimension for MHL, including recognising the symptoms that may reflect a problem (such as an MHD) and when those symptoms have reached the threshold that professional help is required. Many mental health symptoms are transient and difficult to distinguish from the behaviours and mood changes that are developmentally normal for adolescents, such as changes in mood or relationship changes (MacDonald et al., 2018). Recognition is an important skill for those youth affected by mental distress, along with their support systems. Parents, teachers, and friends need to be able to recognise that there is a problem to obtain appropriate sources of help for someone experiencing mental distress.

Researchers have questioned whether it is enough to differentiate between normal life stress and mental distress, or whether knowledge of specific types of mental distress is required (Wright et al., 2007). Despite concerns about stigma associated with psychiatric labels, researchers have found that correct labelling is associated with selecting the appropriate choice of help-seeking and treatment choices and being less likely to choose inappropriate self-help and coping strategies (Wright et al., 2007). Further, Wright et al. (2011) suggest that using accurate psychiatric labels may counter some stigmatizing attitudes as they were associated with viewing the person as “sick” not “weak” in their study of Australian young people (aged 12-25, N = 3746). These studies suggest correct labelling has positive effects on help-seeking, though they note the possibility of social desirability bias in the study responses. Further discussion of the impact of stigma and labelling is presented below.

Alongside knowledge of MHDs and how to recognise them, MHL includes knowledge about *sources of help* available including formal, informal, and self-help (Jorm, 2019). For adolescents in distress, it is important to know how, when and where to seek mental health information (MHI) and

to distinguish when to approach formal help sources such as counsellors, psychologists and general practitioners, rather than informal help sources such as family and friends (Mansfield et al., 2020). Goodfellow et al (2023) found that higher knowledge of treatment efficacy was associated with increased formal and informal help-seeking intentions, highlighting the importance of this dimension of MHL. Self-help includes appropriate coping strategies and techniques to use when experiencing milder problems (Jorm, 2019). Self-help knowledge includes both identifying and acknowledging evidence-based self-help strategies, such as exercise, social activity, relaxation training, meditation and self-help books, as well as identifying and acknowledging common self-help strategies that may be harmful in the long term, such as using alcohol or other drugs (Jorm, 2012; Jorm & Griffiths, 2006; Morgan et al., 2016).

Finally, MHL includes knowledge about how to provide mental health first aid to others. Mental health first aid includes approaching the person and assessing the situation (that is, assessing the risk of harm such as self-harm or suicide), listening non-judgementally and providing support to the person in distress, and encouraging the person to seek professional help (Jorm, 2012, 2019). Researchers have been investigating ways to teach mental health first aid, though the literature on this is limited and suggests non-significant improvement in the quality of support provided after training (Usmani et al., 2022). Teens in distress often first confide in their peers, so understanding the strategies used to support each other, and what they know about possible strategies to help their friends is important in considering the pathways to care and information-seeking in which teens are engaged.

2.4.2 Stigma, beliefs, and attitudes

Jorm's original definition of MHL includes attitudes that promote recognition or help-seeking alongside knowledge. Some researchers have included help-seeking attitudes and stigma within the construct and measures, while others assess these separately, highlighting the difficulties with the conceptual definition in the literature (Mansfield et al., 2020). Whether included as an outcome

measure or within the MHL construct, 55% of all MHL studies measured mental health stigma (Mansfield et al., 2020).

Stigma itself comprises multiple constructs: public stigma (negative societal attitudes towards something, such as depression or mental illness), self-stigma (negative attitudes towards oneself, internalised stigma), personal stigma (negative attitudes towards others), perceived stigma (negative beliefs about other's perceptions, awareness of stereotypes) and treatment stigma (negative attitudes about receiving treatment) (Du et al., 2023; Wright et al., 2011). In Du et al's (2023) systematic review and meta-analysis of stigma research, 29% of people living with depression displayed moderate to high levels of self-stigma. Stigma against mental illness and mental distress presents differently for different disorders, with psychosis more commonly viewed as dangerous while those experiencing depression more likely stereotyped as weak or uncommunicative (Du et al., 2023; Wright et al., 2011). Self-stigma reflects these stereotypes on oneself and may involve feelings of guilt or shame over not being able to overcome the illness and how it is impacting on their life (Wright et al., 2011).

2.4.3 MHL Research

Since MHL was first introduced in 1997, there has been a proliferation of studies investigating the MHL of various groups for specific disorders. Groups have been investigated by age, including adolescents/secondary school students (e.g. L. H. Clark et al., 2020; Halsall et al., 2019; Jorm et al., 2007; Levin-Zamir et al., 2011; Thai et al., 2020), college/post-secondary students (e.g. Coles et al., 2015; Cormier et al., 2022) and older people (Ding et al., 2022); profession, including pharmacists (O'Reilly et al., 2010) medical and paramedic students (King et al., 2022; Marwood & Hearn, 2019), clergy (Vermaas et al., 2017) teachers (Ní Chorcora & Swords, 2021; Prabhu et al., 2021); and broader community samples (e.g. Gibbons et al., 2015; Jorm et al., 1997; Tomczyk et al., 2018). However, as can be common in psychology studies, most studies use university students with half of all MHL studies reviewed by Wei et al. (2015) using post-secondary students as their participants. Of course, university students also represent an important population for MHL

interventions, with high levels of stress and psychological distress, and high rates of suicide (Holman & Williams, 2020; Naal et al., 2022).

Most studies to date have been conducted in Western countries such as Australia, the United States, Ireland, Canada and the UK (Mansfield et al., 2020; Thai et al., 2020; Wei et al., 2015). An obvious critique of the literature to date is that the studies to date have been too focused on majority population samples; that is, the research from the United States, Australia and others have sampled predominantly white, western, English-speaking populations (Thai et al., 2020). The concept and measurement of MHL have not been adapted to consider how cultural differences may impact the onset and treatment of mental disorders or mental distress. There is a burgeoning area of research in Asian (Ding et al., 2022; Munawar et al., 2022; Thai et al., 2020; Yamaguchi et al., 2021), African (Kometsi et al., 2020), and Arabic (Alshehri et al., 2021; Nejatian et al., 2021) contexts, which may help to broaden the cultural understanding of MHL. Additionally, researchers are investigating immigrant and linguistically diverse populations in English-speaking countries (Na et al., 2016), and indigenous populations who have specific needs and challenges that are often unmet by mainstream services (Goetz et al., 2023).

In AoNZ, Tissera and Tairi (2020) investigated the MHL of adolescents (N =114, M = 16.72 years) in a partial replication of Melas et al.'s (2013) Swedish study, which used vignettes to…. Most participants (73%) correctly identified depression in the presented vignette. Fewer participants (51%) correctly identified the schizophrenia vignette, though many participants suggested a different mental disorder as causing the psychotic symptoms (Tissera & Tairi, 2020). With regards to help-seeking, half of the participants recommended professional help for each of the depression and schizophrenia vignettes (55.3% and 53.5% respectively). Non-professional help was suggested by the vast majority for both the depression (93.9%) and schizophrenia vignettes (74%) (e.g., adult or peer support, communication, entertainment, or distraction), although participants also recommended police or child welfare agencies' involvement in the schizophrenia case for safety reasons Accurate labelling of symptoms did not predict participants' professional help-seeking recommendations for

the depression vignette ($\chi 2$ (1, N = 114) = 0.46, p = .499.), but did for the schizophrenia vignette ($\chi 2$ (1, N = 114) = 5.84, p = .016.) (Tissera & Tairi, 2020). This small-scale study was a promising start to MHL research in AoNZ.

While not categorised as MHL research by the authors, Holman and Williams' (2020) study on beliefs about suicide (including stigma) and help-seeking intentions reflects three of the major dimensions of MHL. the study investigated the perceptions and beliefs held by university students aged 18-24 (*N* = 100, *M* = 21.38, *SD* = 21.38) with stigmas around both mental illness and asking for help identified by a quarter of participants (12% and 25% respectively) as factors leading to AoNZ's high youth suicide rate. Participants suggested education about mental health and suicide, including symptom recognition, as ways to improve, further reflecting the overlap with MHL.

2.5. Social Media

We know that young people are living much of their lives online, so what we need to know is how that time online influences where and how they look for information or help.

2.5.1 Social Media and Digital Access

Though often considered a single entity, social media encapsulates a wide variety of platforms with different audiences and practices (Lim et al., 2022). Since the Internet was first introduced to the general public in the early 1990s, social media platforms have linked people over the internet in virtual communities (Aichner et al., 2021). As an umbrella term, social media refers to a wide variety of websites and applications (apps) intended to facilitate engagement including blogs, social networks, forums, microblogs, photo sharing, review sharing, gaming, video sharing, and virtual worlds. The purposes of different social media platforms range from socialising with friends/family, romance and dating, job seeking and professional networking, business-to-business communication, and business-to-customer interactions. This is separated from traditional media (such as television and radio) by the abilities to create, not just consume, content and interact with others on the platform (Craig et al., 2021; Nesi, 2020). Some platforms are more likely to be used to connect with real-life friends while others are used to interact with strangers (Phua et al., 2017).

Platform audiences also vary considerably, particularly by age with younger audiences more likely to adopt newer platforms quickly.

Today's adolescents, born between 2005-2015, are digital natives – they have grown up with digital technology, social media and cell phones surrounding them. From a young age, this generation had access to the internet and their own internet-accessible devices such as smartphones, laptops, or tablets. In the US, children as young as 2 are reported to spend an average of 49 minutes a day with screen media, increasing to two and a half hours for ages 2-4 and over three hours for ages 5-8 (Rideout & Robb, 2020). In a 2017 UK study of adolescent girls (age 11-16), 98.7% reported using the internet on their smartphone or tablet, with an average reported time spent on the internet each day of 3.8 hours (SD = 1.66). Internet and app use were each primarily focussed on entertainment (e.g. media, music, and gaming) and social communication (messaging and social media) (Grist et al., 2018). In AoNZ, the Youth19 study reported 97% of students (years 9-13) had access to a smartphone, laptop, computer or tablet in their spare time (King-Finau et al., 2021). Although there are disparities in access between groups (age, school decile, and ethnic group), over 90% of students in each group had access to a device (King-Finau et al., 2021).

2.5.2 Impacts on adolescent mental health and wellbeing

For parents, there is endless content online warning of the dangers of social media for teenagers in blogs (e.g. *TikTok Self-Diagnoses on the Rise, Why It's Harmful | Banner*, 2021), opinion pieces (e.g. Blotcky, 2021) and newspaper/magazine articles (Byrne, 2021; Hewett, 2023; Stone, 2024), the research is much less certain. A 2014 systematic narrative review outlined the division of opinion on this topic but found the majority of reviewed studies had mixed or no effect of social media on adolescent wellbeing (Best et al., 2014), and subsequent research has remained divided (Granic et al., 2020).

Researchers have found that although the use of smartphones and social media has exploded since 2012, these levels of use are not uniformly associated with increased mental distress among individuals (Fleming et al., 2022; Ivie et al., 2020; Odgers & Jensen, 2020). While many studies

have suggested a connection between social media use and mental distress, these are largely observational and correlational providing no clear answers about the direction of causation (Abi-Jaoude et al., 2020; Granic et al., 2020). Moreover, recent studies suggest a bidirectional relationship between mental health and screen use (Granic et al., 2020).

Thus, it may be factors relating to the kind of social media used, experiences and behaviour online or individual differences of young people, rather than the use of social media generally, that explain potential negative outcomes. Examples of these factors include experiences of online risk exposure,[2] negative social comparisons, the displacement of other beneficial activities such as reduced face-to-face time with family and peers, or reduced sleep hygiene (Fleming et al., 2022; Nesi, 2020).

2.5.3 Positive impacts of social media use

While the negatives of social media are well-publicised, researchers have also uncovered benefits to social media use such as increasing social capital, social networks, and social support (Best et al., 2014). Social capital, the shared resources such as networks and norms that adolescents develop as they engage with others online, is generally considered an asset (Maghsoudi et al., 2020). Increased internet usage is thought to increase online social capital, providing adolescents with wider networks and more options for social support, and providing opportunities for adolescents to engage in communities, share knowledge, self-disclose, and receive support (Best et al., 2014; Haltigan et al., 2023; Maghsoudi et al., 2020). While adolescents may benefit from these online personal relationships, there remains the risk that these relationships involve negative experiences and other online risks. Maghsoudi et al (2020) suggest that social capital may in fact function as a risk

[2] Online risk exposure - an umbrella term for the contact adolescents face online such as cyberbullying and harassment (including sexual solicitations), exposure to explicit content, or information/privacy breaches - are a significant cause of psychological distress for young people online (Maghsoudi et al., 2020). In AoNZ, nearly half of teens (13-17) reported being exposed to at least one kind of potentially harmful online content such as violent images (36%) hateful conduct (27%), or content about self-harm (20%), suicide (17%) or ways to be very thin (15%) (Pacheko & Melhuish, 2020)

factor, rather than a protective factor, for online risk experiences and psychological distress, particularly where adolescents have an over-reliance on online relationships.

Nevertheless, there is considerable research indicating that the direct social and emotional support delivered by online networks contributes to increased self-disclosure of personal challenges including mental ill-health, and when that self-disclosure is received positively, young people's perceptions of social support and community increase (Best et al., 2014). This is particularly true for stigmatised groups such as rainbow people, which will be discussed further in the Rainbow Experiences section.

Online communication by young people includes more self-disclosure and is more emotionally empathetic than that of adults, leading researchers to examine the role of supportive online environments for young people (Best et al., 2014). Sites that allow anonymity (i.e. online forums such as Reddit) or semi-anonymity (i.e. Instagram or TikTok where there is no real name policy) can encourage authentic disclosure by reducing the perceived vulnerability of disclosing stigmatized content (Luo & Hancock, 2020).

Recent research on the relationship between self-disclosure (such as social media status updates) and wellbeing suggests a bi-directional relationship, with wellbeing state influencing types of self-disclosure, and self-disclosure influencing wellbeing (Luo & Hancock, 2020). Unfortunately, distressed individuals may present more negative and less honest or authentic self-disclosures, which may receive fewer positive responses from others, and they may also fail to perceive the support they are receiving (Luo & Hancock, 2020).

These bidirectional relationships described above suggest that when young people are distressed, they may turn online for support or to increase their mood, but the types of content they engage with may make distressed people more distressed if they receive negative feedback or are unable to perceive the feedback as supportive. Accordingly, we must know where and when young people are accessing mental health content.

2.6 Online Mental Health Information and Mental Health Content

2.6.1 Digital Access and Online Information seeking

Researchers have estimated up to 90% of young people attending professional consultations have previously accessed MHI online (Scott et al., 2022). It has also been reported that 40% of people who seek health information online use that information to decide whether to seek professional help, and 60% report those results influence their view of treatment options (Scott et al., 2022). Given young people's preference for independence and self-reliance, online and digital tools can facilitate help-seeking by providing accurate and accessible information and promoting the agency of the young person (Radez et al., 2021).

Accordingly, many researchers and clinicians have turned to digital mental health interventions through apps and websites to meet teens where they are and improve access to professional help. These websites and apps often incorporate computerised therapy delivery such as SPARX (Merry et al., 2012), a computerised self-help intervention for teens that utilises a computer game format to teach therapeutic skills designed in AoNZ. There are also apps which provide a wide variety of complementary tools for mental health such as digital versions of existing psychometric tools, reminders for health-related tasks, monitoring and recording moods and teaching or encouraging skills such as mindfulness or breathing techniques (Marshall et al., 2020). Many of these apps and websites were designed to be used either as a self-help tool, or alongside face-to-face mental health services.

Interest in digital tools and how they can support young people's mental health was spurred on by the COVID-19 pandemic and the interruptions to services caused by extended lockdowns. Irish young adults (aged 18-25) reported using social media (51%), mental health apps (33%), health or charity services websites (26%) or professional online counselling services (13%) as sources of support supporting their mental health during the pandemic (Pretorius & Coyle, 2021). .

While there have been many promising results found from these apps, particularly for the treatment of depression and anxiety, there remains questions about their usability and popularity. Unfortunately, it is unclear if this is working. Bradford and Rickford (2014) suggest online help

sources have not successfully overcome the existing barriers faced by adolescents as teens' intention was not to seek help at all. In the UK, in Grist et al's (2018) survey of adolescent girls in South-west England (N = 775), 51% of girls surveyed said they would be interested in using apps to access mental health help if they had mental health problems. However, for those who scored above the cut-off points for depression, anxiety, or problematic eating, only 5.7% had used the internet for help and only 16% had used a mental health app.

Identified reasons for not using apps or other online sources of help reflect concerns about the accuracy of information, fear of unauthorised access or others seeing the app on their device and a preference for face-to-face intervention. Furthermore, for those who do try out these apps or websites researchers have found that dropout rates are significantly higher than face-to face therapy, as many health apps are too complex or time-consuming, or users simply lose interest (Marshall et al., 2020). Research has also suggested users may want less pathologized approaches to mental health, such as resources that were not directed at mental illness but rather acknowledging short periods of poor mental health, or advice for bad days (Pretorius & Coyle, 2021) There also remain questions around the quality of apps being accessed as, although there are a number of evidence-based apps available, individuals often find apps through word of mouth, social media or "top mental health app" lists (Denecke et al., 2022; Marshall et al., 2020). Many of these apps are not studied, and conversely many apps which do have a robust evidence base are not currently available on the Android or iOS (apple) stores (Denecke et al., 2022). Finally, users may be blocked by payment barriers with users unable or unwilling to pay for apps or access premium features kept behind paywalls (Pretorius & Coyle, 2021)

While these remain promising avenues for providing mental health information and interventions to those who cannot access face-to-face therapy, there remains considerable work to be done to ensure that apps are evidence-based, effective and engaging enough that users continue using them long enough to receive the benefits of use.

2.6.2 Social Media use and content

With social media being such an omnipresent part of young people's lives, developing evidence suggests that social media is starting to replace traditional search engines for information-seeking (Best et al., 2014; Birnbaum et al., 2017; Pretorius, Chambers, & Coyle, 2019). Scott et al (2022) identified the lack of empirical studies regarding youth engagement with user-generated content (i.e. social media posts) as a "glaring gap" in our understanding of adolescent interaction with online MHI. Combined with the knowledge that many young people seek information online before approaching formal help-seeking sources, it is increasingly important to understand what kind of content is being seen and interacted with by teens on social media.

2.6.3 Social Media Platforms

As noted earlier, different social media platforms have different purposes, and the emerging research suggests this is true for those using social media for MHI. Craig et al (2021) classify apps as content production and sharing platforms (such as Instagram, Facebook or Reddit) and content consumption platforms (such as YouTube, Spotify or Pinterest) and suggest people use these differently. Content consumption platforms are said to allow users to view themselves in the content of others, which can be important for social and identity development.

In a study of Irish young people (aged 18-25), platforms primarily using images or videos appeared to be more popular for mental health content, with Instagram, YouTube and TikTok the most commonly used social media platforms (Pretorius & Coyle, 2021). Instagram was often used to follow 'influencers' (social media users with high follower counts and engagement) or specific hashtags for mental health advice or guidance. Conversely, Facebook was more commonly used to access support groups (e.g., eating disorders or ADHD), reflecting more peer-to-peer interaction than content consumption, like the use of message board platforms such as Reddit. Finally, platforms like YouTube and TikTok were used for distraction or humorous coping.

Alongside differing usage, platform popularity can change quickly, particularly as new apps are released, or old platforms closed. For example, Brown et al (Brown et al., 2021) explored social media use for supporting mental health and selected their platforms partly based on the most used

platforms of 2019. By the time the study was published in 2021, TikTok, which debuted in 2018 and was not considered for the Brown study, had overwhelmingly overtaken Facebook and Twitter in usage, both of which had declined in usage over the past few years (Pew Research Center, 2022).

Recently, TikTok has been highlighted as an ideal platform to disseminate information to improve the mental health knowledge of young people given the demographics of the users, with 41% of TikTok users aged 16-24 (Comp et al., 2021). The use of short, easy-to-view videos can be an efficient and engaging format for presenting information directly to young people, with the ability to tag videos to a topic providing an "on-demand" library of content that may provide "just in time" information and learning for users (Comp et al., 2021).

New research by Pretorius et al (2022) assessed posts by mental health professionals on TikTok (n = 28) and Instagram (n = 22). While similar content was posted on TikTok and Instagram, and many of the professionals posted on both platforms, the analysis identified an interesting difference. While education was the most common purpose on both platforms (TikTok 67.86% and Instagram 66.43%), this was followed by engagement on TikTok (20.00% compared to 2.72% on Instagram) and promotion on Instagram (28.18% compared to 2.865 on TikTok), suggesting a difference in the use of each platform. While this is very limited, and speculative, evidence of differences in the use of each platform, it nonetheless highlights suggests these platforms are used differently whether by those posting content, consuming it, or both.

2.6.4 Social Media Mental Health Content

To understand the kind of mental health related content being posted, researchers have used content analysis to categorise and consider social media posts. These studies allow us to consider the kinds of posts being put on social media, including features such as who is posting (e.g., whether mental health professionals or service users), what they are posting about, the kind of reaction they are receiving from other social media users, and the reach of posts (i.e., how many times it has been seen, liked, or commented on).

For example, Chadee and Evans (Chadee & Evans, 2021) assessed the most popular 100 videos related to the UK NHS Child and Adolescent Mental Health Service ("CAMHS") under the hashtag "#CAMHS". This study found the three most common themes of these videos were awareness of mental health symptoms (40%), reference to self-harm (27%) and negative perceptions of CAMHS (27%). They also reported the most shared video theme related to reference to suicide with videos related to suicide shared over 50,000 times. The researchers noted that these videos could provide important insights into the consumer experience of the service and should be taken seriously. They also noted the potentially detrimental impact of jokes, memes and negative videos posted about the CAMHS service on current and future service users.

Basch et al (2022) analysed and coded 100 videos containing the hashtag "#mentalhealth" on TikTok to investigate the content of the videos themselves and comments left by other users. These videos had a cumulative reach of over 1 billion views. This study categorised the videos by creator (e.g., consumer-generated versus influencer or verified user) and content (e.g., general mental health, personal experience, depression, suicide coping strategies, etc.) as well as categorising the comments left on the videos by theme (e.g., support or validation, describing MH issues or struggles, sharing coping strategies etc). 40% of the videos were coded as personal experiences including individuals sharing their stories of experiencing and overcoming mental distress, but also distressing and potentially triggering posts made during periods of distress including depictions of self-harm and suicidal ideation (Basch et al., 2022). These personal experiences can provide anecdotal experiences of symptoms and treatment and normalise these experiences for others, but may also be traumatic or triggering for which may be detrimental to some viewers (Basch et al., 2022; Yeung et al., 2022). Researchers have also found that informal, peer-driven content (which may include triggering or encouraging content) is accessed more often than professional websites (Duggan et al., 2012).

More specifically, researchers have assessed the presentation of specific MHDs in online content. For example, Yeung et al (2022) investigated the quality of the top 100 videos on TikTok

under the hashtag #adhd. A startling 52% of those videos were deemed to be misleading, meaning they contained information that lacked scientific evidence such as unsubstantiated claims about treatments, overgeneralisations, oversimplifications or transdiagnostic symptoms attributed to ADHD only[3]. Only 21% of the videos were deemed helpful (that is, containing scientifically correct information about ADHD) and the other 27% were labelled as personal experience (a person describing their experience only, not including generalised statements). Engagement was highest with personal stories although misleading videos were most common. Though Yeung et al (2022) acknowledge that not all videos would have been intended to disseminate information – many creators may have filmed spontaneously or for humour – they noted regardless of the intent, the descriptions or generalisations could be misleading to viewers.

Devendorf et al (2020) undertook content analysis of presentations of depression on YouTube and while their conclusions were more positive and did not highlight widespread misinformation, they noted that just 9% of videos were uploaded by mental health professionals or organisations. When reviewing the causes of depression presented in the videos, the researchers noted that the videos often presented biological or environmental factors but were unlikely to present them existing at the same time in a biopsychosocial model. Worryingly, personal weakness causal models were identified in 20% of videos, and the researchers noted that this causal model predicted higher view counts.

A significant concern around presentations of MHDs on social media is the fear that people (particularly young people) are incorrectly self-diagnosing MHDs based on the content seen online. This is an interesting challenge – we want to provide information and awareness of mental health disorders and increase the mental health literacy of young people so that they can recognise distress and seek help. Still, we are also concerned that young people may be over-generalising and

[3] It should be considered that the limited categories used may reflect a blunt instrument for analysis. As research takes time and resources to conduct, some of the videos deemed misleading may reflect emerging knowledge that has not yet been adequately researched, particularly relating to the experiences of women and girls diagnosed with ADHD who may present differently to the traditional “disruptive boy” presentations which dominate the literature (Mowlem et al., 2019).

incorrectly self-diagnosing or over-diagnosing themselves. While not conducted with adolescents, a study with the general population and university student cohorts reported relatively accurate self-diagnoses for both depression and generalised anxiety disorder (Rutter et al., 2023). Where there was lower self-diagnosis accuracy, participants failed to self-diagnose, rather than over-diagnose. Specifically, mania was not detected by those without clinical diagnosis, and alcohol and substance-use disorders were under-self-diagnosed, particularly in the university-aged sample where binge drinking and substance use are more prevalent and normalised. Self-diagnosis, and the accuracy of self-diagnosis, is outside of the scope of this thesis; however, this is an important topic for future research related to social media and mental health.

Further to the self-diagnosis concern, some researchers and clinicians have proposed a "social contagion" theory for mental illness, particularly through audio-visually immersive social media such as TikTok (Haltigan et al., 2023). This is most notable in the example of "TikTok tics", where clinicians across Canada, the United States, the United Kingdom, Germany and Australia reported a sudden increase in referrals for vocal and motor tic-like behaviours during the COVID-19 pandemic (Hull & Parnes, 2021; Olvera et al., 2021; Pringsheim et al., 2021). It was suggested that many of these (almost exclusively female) adolescents developed these rapid-onset functional movement disorders after exposure to tic-related content on TikTok and YouTube. Hull and Parnes (Hull & Parnes, 2021) present a case series of six adolescent girls in the UK, each of whom reported exposure to a specific social media influencer before their symptoms began, with similarities in their tic type, movement and onset which they suggest may be spreading via social media. These social media influencers are said to be "virtual index cases" of a mass sociogenic illness, initiated through online contact with the influencer resulting in an outbreak of a 'Tourette's epidemic' (Müller-Vahl et al., 2022).

In a similar vein, researchers have identified that some social media content may encourage maladaptive or dangerous behaviours.[4] For non-suicidal self-injury (NSSI or self-harm), site content studies of YouTube videos have found photographs or live videos of self-injury, frequently met with positive and normalising comments that encourage the self-injury behaviour rather than recommend treatment (Abi-Jaoude et al., 2020). It may therefore be that the internet's strengths may also be its weaknesses. The anonymity, social support, and information-sharing properties that can be so useful to some people can also be used negatively to normalise and encourage maladaptive coping behaviours such as self-harm, providing a substantial amount of information on concealing scars and self-injury techniques alongside more positive information on how to get help to stop (Duggan et al., 2012; Lewis & Knoll, 2015).

In their assessments of the TikTok videos, Basch et al (2022) also analysed the comments left on these videos by other TikTok users. This study found that 60% of the videos assessed in their TikTok review had comments providing support and validation for the user highlighting the social support and normalisation possible from social media posting. However, many comments included negative sentiments indicating the commenters' serious mental health concerns including depression, anxiety, grief, anger and trauma (Basch et al., 2022). While these negative comments may also serve as validating and normalising, the fear remains that such content may be traumatic or triggering for other users, particularly those using the platforms for long periods of the day. Suicide and suicidal ideation were mentioned in 14% of comments, with self-harm (7%) and hospitalisation (11%) also noted. Self-help or coping strategies and experiences of healing were only noted in 16% of comments.

[4] Social Media platforms are aware of the concerns around mental health content on their apps, as well as the broader concern about young people's social media use and the impact on their health and well-being. TikTok has positioned itself as being proactive in this space and looking to protect the mental health of its users (Canady, 2021). TikTok has said they do not wish to promote or glorify suicide, self-harm or eating disorders, but do wish to provide a place for people to share their experiences and find or provide support to others. Along with releasing "Safety Center guides" around eating disorders, they have also incorporated features such as pointing users to local support services if someone searches for phrases such as suicide or eating disorders.

While these studies provide important insight into the content being posted, it is unclear who is seeing these kinds of posts. Questions remain about whether they are only being seen by people actively searching for this content, or being shown more broadly to young people as they scroll. We also do not know how often this might be coming across young people's social media feeds. Is this something that pops up occasionally, or are young people being faced with this kind of content every day?

As noted by Pretorius and Coyle (2021), many young people now follow influencers online, including those focussing on health and mental health. While there is no agreed definition of influencer, these are social media users who have large social media followings, with thousands of followers and high engagement on their posts(Sprout Social, n.d.). They are internet celebrities, and in recognition of their influence on their audience, commercial brands are increasingly using influencer marketing, partnering with a number of influencers to sell products, rather than more traditional celebrity partnerships (Kostygina et al., 2020). Mental health influencers are people who have grown an audience posting about mental health content, whether they are mental health professionals such as therapists, psychologists, counsellors etc, or posting their own lived experience. Other influencers, such as fitness, nutrition and lifestyle influencers may also be seen as providing mental health content, particularly if they post about boosting mood and wellbeing. There is little research into the impact of influencers, particularly lived experience mental health influencers, on the knowledge and attitudes of their audience. Recently, researchers in the US created a programme to improve the quality of the mental health content posted by increasing the evidence-based content of posts through toolkits and training sessions (Motta et al., 2024). This study showed promising improvements in the quality of content by incorporating more evidence-based mental health content in their videos.

Finally, psychologists and other mental health professionals, including academic staff and researchers, are increasingly using apps such as Instagram and TikTok to provide mental health content that is both informative and entertaining (Mattoon, 2021). This digital knowledge

mobilization allows information to be shared rapidly to a wide audience base that ranges from their peers in the mental health field, to the general public, to underserved and hard-to-reach populations who have had negative experiences with mainstream health services (MacKinnon et al., 2021). In addition to providing quality information, social media use by professionals can also challenge and correct misinformation, particularly for politically controversial health topics such as gender-affirming care for trans youth(MacKinnon et al., 2021).

In a unique study, researchers assessed the content of Instagram and TikTok posts made by mental health professionals with over 100,000 followers against the elements of MHL to explore whether any posts promoted MHL (Pretorius et al., 2022). The researchers identified posts that incorporated five of the seven elements of MHL: enhance ability to recognise specific disorders, promotes knowledge of risk factors, promotes knowledge of self-help/self-treatments; promotes knowledge of professional help; promotes attitudes that promote recognition and help-seeking. There were no posts on either platform promoting knowledge of how to seek mental health information. Commentary from the researchers is clear not to assume the motivation behind posts, but notes that engagement (through likes, comments, and shares) is critical and prioritised, with the purpose behind many of the posts being entertainment, promotion, or engagement. Nonetheless, even if the purpose of many posts was not to improve or facilitate MHL or help-seeking, these accounts may be normalising discussions of mental health and making mental health professionals more approachable and accessible which may promote help-seeking (Alonzo & Popescu, 2021; Pretorius et al., 2022).

Much of the research to date around mental health professionals on social media has been aspirational: looking for ways that mental health professionals can share information online and the possible benefits of presenting evidence-based mental health information in an easy-to-follow format. While previous research has investigated what content people post, what we do not know is whose content are adolescents actually being shown – peers, influencers, or mental health professionals?

2.6.5 Passive Versus Active Social Media Use and The Impact of The Algorithm

In this study, I considered the differences in the ways that young people interact with MHI as consumers of online information. I differentiated this by active searching, that is, purposefully seeking out information including using search functions or hashtags, versus passive exposure whereby teens come across information while scrolling or browsing. This is an understudied area of social media, particularly as the social media algorithms increasingly determine the content seen.

While in this study we are investigating differences in active (searching) and passive (browsing) interaction with social media, this is different to some studies that operationalise active social media use as creating and posting content (e.g. Valkenburg et al., 2022), rather than searching for specific content. In this study we did not investigate the content participants may create or share with their social networks, only the content they are consuming As this project considered how the social media content consumed may influence the MHL of adolescence, content created by participants was out of scope. This study focused on content that is created by other users, such as their friends or family, as well as content created by social media creators and more traditional information sources.

While far beyond the scope of this study, it is important to acknowledge the role of the algorithms social media platforms use to present information to users. It is well known that these algorithms prioritise engagement and attention, but it is not known what impact this prioritisation process may have on the quality or accuracy of posts or information presented to users (Scott et al., 2022). While all social media applications employ some kind of algorithm, TikTok appears to have embraced this most openly, relying on the algorithm rather than one's social network to select content for users (Anderson, 2020). Where other social networks present content based on one's following and followers (that is, seeing content from people within your social network), TikTok focuses on the type of content you engage with, not just who is producing it.

With young people spending ever more time online, researchers must try to unravel the impact of social media not only on young people's mental health, but on their knowledge and beliefs

about mental health. Are the posts young people are seeing and interacting with online improving their knowledge and lessening stigma?

2.7. Well-being

Health, and wellbeing, is said to be not a medical concept but a philosophical one – not the absence of illness but the experience of a good life (Ryff & Singer, 1998). Accordingly, the conceptualization of wellbeing varies based on the approach or philosophy of the researcher. Within the literature, wellbeing is historically differentiated by the hedonic (subjective wellbeing; happiness and satisfaction) and eudaimonic (achieving one's potential; living well) traditions (Carr, 2022; Deci & Ryan, 2008). Currently, researchers have agreed that wellbeing is multi-dimensional but have disagreed over which dimensions should be included, with multiple models, measures and theories discussed and compared in the literature (Dodge et al., 2012; Goodman et al., 2018).

In general, wellbeing relates to broader mental health, is separate from disorders or pathology and is not determined by the absence of mental illness or symptoms. Within modern definitions of wellbeing or mental health is a holistic focus on how to achieve and maintain wellbeing through spirituality, social relationships and physical health (Gieck & Olsen, 2007; Travia et al., 2022).

Many organizations and researchers have conceptualized mental health in this way. For example, the World Health Organisation defines mental health as "a state of wellbeing in which the individual realizes his or her abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to contribute to his or her community" (World Health Organisation, 2022 para. 1). In this way, mental health and wellbeing are sometimes used together, or interchangeably, particularly in the media and grey literature about mental health.

In the AoNZ context, wellbeing can be conceptualized following a Kaupapa Māori approach using Māori models of health. The most common of these is Te Whare Tapa Whā, Mason Durie's seminal model of Māori wellbeing (Durie, 1998). Te Whare Tapa Whā depicts health as a wharenui (meeting house, generally the focal point and most important part of a marae). The wharenui incorporates four pou (pillars) or taha (sides) of wellbeing: taha wairua is the spiritual aspect, things

that give your life meaning. Taha hinengaro is psychological or mental and emotional wellbeing, your thoughts, and feelings. Taha tinana is physical wellbeing, the health and care of our body. Taha whanau is family and community or social wellbeing. Finally, whenua, or land, provides the foundation reflecting the important connection of Māori with their land, but also the need for a strong foundation or place of belonging. Durie's model is based on balance. Each pou requires time and attention, and neglecting any one aspect will impact on our general wellbeing. Inherent in the model is the need to pay attention to and actively look after each pou.

Many indigenous researchers criticize Western psychological concepts as too focused on the individual self (Cram, 2014). The Māori approach to wellbeing represents a holistic view of wellbeing, not just on the individual level but also incorporating whanau/family and community wellbeing. The inclusion of social aspects, such as community and relationships, into the definitions of wellbeing also positions this well for research relating to online communities and relationships. Prior research has identified the importance of social support for wellbeing (Best et al., 2014). Better relationships and closer intimacy are correlated with wellbeing, and social support has been hypothesised to provide a buffering effect to against harmful life events. With this in mind, it is important to understand how adolescent wellbeing may be impacted as they are experiencing much of their socialising online and facilitated by technology.

2.8. Rainbow experiences

In considering how different groups may experience social media mental health content differently, Rainbow young people stand out as a group with a high mental health burden and increased likelihood to look for community online. Accordingly, it is important to consider whether this is reflected in their MHL and how these young people use and experience social media and online MHI.

2.8.1 Mental Health Experiences

Rainbow youth experience significantly higher rates of mental distress, suicide, non-suicidal self-injury and eating disorders than their non-rainbow peers (Ren et al., 2022) . In addition to the

changes experienced by their non-rainbow peers, puberty and adolescence are the time when many Rainbow youth are first discovering their gender and sexual identity in ways that do not fit with the expectations of their family or peers. In AoNZ, the Youth19 survey results presented stark differences in the mental health responses of sexual minorities and transgender and gender-diverse students compared to their different-sex attracted and cisgender peers respectively. Specifically, 53% of same- or multiple-sex attracted students reported significant depressive symptoms, 50% reported self-harm and 13% reported suicide attempts. By comparison, different-sex attracted students reported 21.4%, 21.5% and 5.7% respectively (Fenaughty, Sutcliffe, Clark, et al., 2021). Similarly, 56.6% of transgender and diverse students reported significant depressive symptoms, 56.9% reported self-harm and 26.4% reported a suicide attempt, compared to 22.6%, 22.1% and 5.9% respectively for their cisgender peers (Fenaughty, Sutcliffe, Fleming, et al., 2021). These discrepancies are also apparent in other areas of life including feeling safe in their neighbourhood, a part of their school and that at least one parent cares a lot about them.

These results support the earlier research regarding the mental health concerns and unmet needs of rainbow communities in AoNZ, both in adolescent-specific (e.g. Youth12, T. C. Clark et al., 2014) and adult populations (Tan et al., 2020) as well as internationally (Painter et al., 2018; Steele et al., 2017).

2.8.2 Minority stress

It is important to note that rainbow identity itself is not a risk factor for MHD, nor is it an indication of individual psychopathology. Rather, these local and international surveys highlight the higher levels of social isolation, unsafe environments and bullying experienced by rainbow young people compared to their non-rainbow peers (du Preez & Macdonald, 2016; Tan et al., 2020). These additional, and sometimes unique, challenges that come from being part of a marginalised group member, (e.g.,. legal marginalisation and discrimination) have been termed “minority stress” highlighting the role of these challenges in the aetiology and maintenance of MHDs for these populations (du Preez & Macdonald, 2016; Eldahan et al., 2016; Meyer, 2013; Oliphant et al., 2018;

Rich et al., 2020). For example, the internalisation of societal stigma and the impact of repeated discrimination and rejection, and how these may deplete someone's coping mechanisms and resources (Cronin et al., 2021).

These minority stressors provide additional or larger barriers to mental health care for rainbow folks, such as fears of discrimination and a lack of trained practitioners who understand LGBTQ issues (Cronin et al., 2021). International research suggests that while rainbow folks may be higher users of mental health services, there remains more unmet needs and barriers to accessing care for these populations compared to heterosexual and cisgender peers, particularly in rural areas. (Cronin et al., 2021; Steele et al., 2017).

2.8.3 Social Media use of rainbow young people

While research remains limited, extant research suggests access to the internet and digital devices does not differ by sexual orientation or gender identity, however, social media use does (Craig et al., 2021; Seidenberg et al., 2017). Seidenberg et al (2017) found that LGB respondents reported greater use of online media (including social media), with greater odds of having social media accounts for each social media site in the survey, as well as greater odds of having an account on more than three social media sites. LGB respondents were also found to report more frequent social media use, and to have met new friends online.

One explanation for the increased time online for rainbow youth, is that these online spaces serve as informal learning environments as they explore, name, and first disclose their emerging rainbow identities (Craig et al., 2021; Selkie et al., 2020). Social media and other online spaces allow rainbow youth to anonymously access content about their stigmatised identity without fear of potential disclosure, including resources within their offline communities. For those exploring their gender identity, these online spaces can be particularly important in finding information from other transgender people that they would not otherwise have in their personal networks (Selkie et al., 2020)

These communities, both online and offline, allow rainbow folks to join supportive communities and find LGBTQ role models, particularly in rural communities (Craig et al., 2021). This social connectedness enhances wellbeing for rainbow youth, providing opportunities for social and emotional support. While rainbow young people may struggle to find social support in their homes and offline communities, many report finding this support online instead providing positive feedback and validation from others, including passive appraisal support through seeing positive comments on others users' posts (Selkie et al., 2020). Social support is also an important protective factor against suicide risk and online peer support represents an under-studied area in mitigating suicide risk (Kia et al., 2021)

For transgender young people, social media and other online spaces can be particularly important information sources around gender-affirming therapy and access to physical transition treatment options such as hormones. These spaces may also provide opportunities for young people to see other people's experiences of transition, which can normalise a stigmatised experience and provide optimism that transition is possible for them (Selkie et al., 2020). Scoping reviews identified advocacy and education as important themes in peer-to-peer information sharing and support as communities respond to minority stressors by sharing the information needed to survive and thrive (Harner, 2021).

While the extant literature appears to show a largely positive relationship for rainbow youth through community building and informational, emotional and social support, we cannot ignore the reality of online risk experiences, harassment, bullying and other negative experiences (Selkie et al., 2020). Posting in rainbow spaces on public sites makes rainbow young people vulnerable to online harassment and future privacy invasion through their digital footprint, with rainbow adolescents at higher risk of this kind of victimisation.

As with young people more generally, digital mental health tools have been suggested as a solution to the various barriers to access and support for rainbow young people. Research suggests that LGBTQ+ people may be more likely to seek mental health information online, and access digital

mental health tools and interventions (Schueller et al., 2019). In particular, the need for rainbow folks to access therapists and professionals experienced in dealing with the specific challenges faced by rainbow youth (Schueller et al., 2019).

2.8.4 Mental Health Literacy

Despite longstanding knowledge of the higher prevalence and risk of depression in sexual minority populations, there are only a handful of studies investigating or reporting the mental health literacy of rainbow populations (Ferlatte et al., 2021). The first study investigating the MHL of a rainbow sample was not published until 2014, when researchers surveyed gay men in Switzerland, with only 44.1% of respondents correctly identifying depression in a case vignette (J. Wang et al., 2014). The survey also asked if they believed gay men are more/less/equally susceptible to depression, with 51.4% respondents believing gay men are more susceptible, and 41.1% and 0.6% believing they are equally or less susceptible to depression. Reasons for this susceptibility included discrimination, acceptance, or rejection by other, loneliness, poor self-image and hiding oneself, reflecting the groups experiences of minority stress and the impacts of this on their mental health. This study surveyed only gay men, so there were no comparison groups reported.

Gorczynski et al, (2017) included sexuality (categorised as heterosexual, bisexual, gay man, lesbian or other) in their UK study of MHL and help-seeking in UK university students. Bisexual participants had significantly higher levels of MHL than heterosexuals, though heterosexuals were more likely than sexual minorities to seek support as measured by the general help-seeking questionnaire.

Lastly, Ferlatte et al (2021) examined the depression and suicide literacy of sexual and gender minority individuals in Canada. SGM correctly answered 71.3% of the questions from the depression literacy scale (Griffiths et al., 2004) and 76.5% of the literacy of suicide scale (Calear et al., 2022), though there were significant differences between the scores of SGM subgroups such as cisgender men, and transgender women scoring lower than cisgender women, and Indigenous SGM scoring lower than White SGM. In their discussion, Ferlatte et al (2021) report that an earlier Canadian

general population study using the same measures reporting lower rates of depression literacy (67.1% correct, contrasted with 71.3% for SGM) and suicide literacy (53.7% correct, contrasted with 76.5% for SGM). This provides encouraging results for SGM and suggests SGM have higher MHL than the general population of Canada.

As is common in MHL research, the three studies here used three different measures of MHL, in three different countries, making comparisons between them difficult. Nevertheless, these studies provide an important base for future MHL research for rainbow populations.

2.*9*. Aims

The current project aimed to investigate the MHL of AoNZ adolescents and how they access and interact with mental health content online. I investigated whether there are differences in mental health literacy and social media use for rainbow young people compared to their peers, given the specific mental health and identity challenges they face (T. C. Clark et al., 2014; du Preez & Macdonald, 2016). Similarly, I investigated whether wellbeing status (high vs low) influenced MHL and social media use in AoNZ, as it has been found to influence social media use internationally (Best et al., 2014; Luo & Hancock, 2020).

I sought to examine the *kind* of content seen online (e.g., personal stories, awareness campaigns, information about symptoms or specific mental illness, information about places to get help, information about the mental health of specific groups, tips for maintaining improving or maintaining good mental health), and whether adolescents are *actively* looking for mental health content or *passively* seeing posts as a result, for example, of a social media platform's algorithm.

Finally, this project explored whether the *way* young people interact with mental health content online (e.g., actively searching for information and interacting with posts online) influences mental health literacy.

Specifically, this research project was based on the following research questions.

2.9.1. Research Question 1: Do MHL scores vary by wellbeing scores or rainbow status?

Hypothesis 1 (H1): I hypothesised Rainbow students would have higher MHLS scores than non-rainbow students as they are more likely to be looking at/learning about MH information online than their non-rainbow peers (Schueller et al., 2019).

Hypothesis 2 (H2): To date, research has suggested there is no relationship between wellbeing and MHL (Gorczynski et al., 2017). However, I hypothesised those with lower wellbeing would have higher MHLS scores, as they may also be looking at or learning about MH due to their lived experience of low wellbeing and possible mental distress. Some predictors for lower wellbeing, such as being female or part of the LGBTQ community (Gorczynski et al., 2017) also predict higher MHL (Gorczynski et al., 2017; Marwood & Hearn, 2019; Moss et al., 2022). Similarly, previous researchers have found that those with a history of mental illness (whether personal or through family or friends) have significantly higher levels of MHL (Marwood & Hearn, 2019; O'Connor & Casey, 2015). Past experiences of MHDs are also a predictor for lower wellbeing again connecting those with high MHL and low wellbeing.

2.9.2. Research Question 2: How do AoNZ young people access and interact with MH messages and are there group differences in these behaviours by rainbow status or wellbeing?

Hypothesis 3 (H3): Based on prior international studies (Pretorius et al., 2020; Scott et al., 2022), I hypothesised that most students (>70%) have looked up MHI online. Prior work has found that between 50% and 92% of young adults have engaged in help-seeking online at least once (Pretorius, Chambers, & Coyle, 2019; Scott et al., 2022).

Hypothesis 4 (H4): Based on the growing number of mental health influencers (Pretorius et al., 2022; Triplett et al., 2022), I hypothesised young people would passively see MHI on social media weekly or more. This is an exploratory hypothesis as this has not been studied before.

Hypothesis 5 (H5): As a comparison to the passive viewing of MHI, I hypothesised young people would be actively searching for MHI less than weekly. Previous studies investigating online help-seeking have assessed if they have, or would, look for information or support on social media, rather than assessing frequency (e.g. Brown et al., 2021), so this is another exploratory hypothesis.

Hypothesis 6 (H6): As an exploratory hypothesis, and in line with H4 and H5, I hypothesised young people would be passively seeing MHI on social media *more often*– i.e., in the scroll/algorithm – than they would actively search for MH content.

Hypothesis 7-8 (H7 & H8): Based on previous studies by Basch et al (Basch et al., 2022), I hypothesised young people are mostly seeing posts by people they know or social media influencers (H7) and mostly personal stories and awareness campaigns (H8).

Hypothesis 9 (H9): Based on the existing literature around app use (e.g. Lim et al., 2022; Pew Research Center, 2022), I hypothesised young people are more likely to see MH content on Instagram and TikTok than other platforms.

Hypothesis 10 (H10): Based on existing research suggesting rainbow young people are more likely to search online for MHI than their non-rainbow peers (e.g. Schueller et al., 2019), I hypothesised the rainbow group would access (measured by whether they have ever looked and frequency online) and interact with MHI (measured by whether they follow influencers that share MHI, their frequency of active searching and frequency of passive interaction/seeing MHI while browsing) more often than the non-rainbow group.

Hypothesis 11 (H11): In line with H2 and based on the assumption that those with lower wellbeing would spend more time online, I hypothesise that those with lower wellbeing scores will access (measured as outlined in H10) and interact with MHI (measured as outlined in H10) more often than those with higher wellbeing scores.

2.9.3 Research Question 3: Does access to and interaction with online mental health messaging predict MHL?

Hypothesis 12 (H12): I hypothesised that those with greater access to mental health messaging on social media (i.e., frequency online and whether they have ever looked up information online) will have higher MHL than those with lower access.

Hypothesis 13 (H13): Similarly, I hypothesised that those with greater interaction with mental health messaging on social media (i.e., follow influencers, frequency active, and frequency passive interaction) will have higher MHL than lower interaction.

3. Method

This study used a cross-sectional quantitative survey, rooted in a positivist scientific approach, to investigate adolescents' mental health literacy (MHL), access to and interaction with online mental health messaging, and how these interact. The survey data was collected between 14 June 2023 and 15 September 2023 (93 days) via an anonymous online survey hosted by the secure online survey software Qualtrics (*QualtricsXM*, 2005).

3.1 Recruitment

3.1.1 School-based recruitment

The original recruitment plan was school-based, with 12 schools identified from the Ministry of Education's New Zealand Schools directory (n.d.). Schools within the Auckland region were categorized by region (North, South, Central and West) and selected with preference given to co-educational state-funded schools. To maximise diversity in the population, schools with explicitly affirmative rainbow groups described on their school websites were prioritised, as well as balancing the decile rankings of the selected schools.

Once ethics approval was confirmed (see appendix 1), I made initial contact with the principal of the initial 12 schools by email (see appendix 2). The email outlined the project and provided options for sharing the link to the survey with their students either by class or in student-wide newsletters or other digital means. Unfortunately, by the time I contacted them after a prolonged ethics process, they had dealt with an extraordinary six months of disruptions.

Schools faced confusion and disruption from the first day of school in January 2023, with orders to close and damage from unprecedented flooding over Auckland Anniversary Weekend followed by Cyclone Gabrielle the following week (Gabel & Knox, 2023; Nixon, 2023). This initial disruption exacerbated the ongoing issues caused by staff shortages and illness with schools dealing with a potential "twindemic" of the flu season and COVID-19 (Kitchin, 2023), and one school closing due to a potential measles outbreak (*New Measles Case*, 2023). 2023 also saw an increase in queer-phobic and anti-transgender rhetoric and explicit violence, exhibited in Aotearoa and globally,

including attacks against a Greymouth church, arson at a Tauranga Rainbow Youth office, and police attendance required due to protests and aggression during a drag story time event in Auckland (Benny, 2023). Against this social and political background, some schools did not want to publicize the survey without parent consultation due to the demographic questions which include intersex and transgender response options. Finally, industrial action by teachers continued through to July 2023, with rolling strikes sending students home one day a week (Nicol-Williams, 2023). Most schools were thus unable to accommodate my request to participate.

To attempt to mitigate these barriers, the original school recruitment list was expanded, and requests to participate were sent to a total of 24 schools in the Auckland region. While three schools initially agreed to have posters put up around the school, delays in receiving the formal permission from the principal or board meant this was ultimately not achieved.

In the end, only one school agreed to some form of participation. A decile 6, co-educational school in West Auckland provided the survey to two eligible classes, totalling approximately 55 students. In return for allowing us to share the survey information with these classes, my supervisor and I provided a requested lesson to students on Rainbow topics, including how to support their Rainbow peers. At the end of the presentation, the study advertising poster was shown digitally along with a QR code to link directly to the survey. The teachers also advised they would share the link again in other classes to maximise responses from their students.

3.1.2 Social Media

Considering the situation with schools, we had to pivot to predominantly social media-based recruitment. The digital poster (appendix 3) was shared on my personal Facebook and Instagram pages, local community Facebook pages, and the PRIDE lab website and Instagram page (@Pridelabnz). The poster was shared as both a post and reshared as a story over the period 14 June 2023 and 15 September 2023 (93 days). I also approached rainbow youth-focused groups to re-share the advertisement, and Rainbow Youth (@rainbowyouth; approx. 11,100 followers) and InsideOUT Kōaro(@insideoutkoaro; approx. 6,800 followers) agreed to share the posts to their audiences.

Finally, using funding from the Massey University Psychology Post Graduate Research Fund we were able to use Instagram advertising to boost the views on our post. The audience for advertising was set to Instagram users aged 16-19 living in Aotearoa New Zealand. The advertising boost was repeated four times for a total of 29 days and had an estimated total reach of 41,875 views, 70% of which were classed by Instagram as female. Geographically, this Instagram advertising reached most of the country; the geographic split of views from the final advertising boost is included in appendix 4. Note that we did not collect location information in the survey to preserve confidentiality.

3.2 Inclusion and Exclusion criteria

Participants were eligible for the survey if they were currently aged 16-19, attending secondary school, and living in AoNZ. Participants were excluded from completing the survey if they were not within the 16–19-year-old age range, or not attending secondary school. Participants were also excluded from the data analysis if the survey was abandoned part way through completion. The survey was assessed as complete and included in the overall study if the participants answered questions in all survey sections; however, participants could miss single items on the questionnaire. For the analyses conducted on each variable, listwise deletion removed any missing responses.

3.3 Sample Size

To determine the sample size required for the data collection, an *a priori* power analysis was conducted using G*Power (Version 3.1.9.7; Faul et al., 2009). Based on mixed findings in the literature, for the group differences we calculated power with a medium effect size (Cohen's f = 0.25), significance level α of 0.05, and power of 0.8. This provided a sample size of 128. For research question three (RQ3), linear regression analysis was planned. Studies investigating MHL in adolescents remain equivocal on predictors of MHL. For example, some studies have found female

gender to be a predictor with others finding no sex differences[5] For this study, we completed the power calculation with significance level α of 0.05 and power of 0.8 and Slope H1 of b = 0.15, providing a total sample size of 343.

3.4 Participants

A total of 526 responses were recorded in Qualtrics. After application of the inclusion and exclusion criteria (see Figure 1), the final sample size was 306. I closed the survey at this number as there was a declining response rate (i.e., there had been no responses on days when the advertisement was not running, and the advertisement was returning fewer responses each time) and I needed time to complete this thesis.

Participants were 306 adolescents aged 16-19 years old currently attending school in AoNZ. The mean age was 16.51 years (*SD* = 0.568). Demographic characteristics are reported in Table 1. The ethnicity breakdown broadly follows the New Zealand population (StatsNZ, 2019), with 74.2% of participants selecting Pākehā/New Zealand European, 19.6% Māori, 15.7% Asian and 6.5% Pacific. A further 3.3% of participants selected Latin American/African/Middle Eastern, and 7.8% specified ethnicities not listed, as detailed in Table 1.

The group difference comparisons required splitting the data by rainbow status. Participants were included in the non-Rainbow group if they selected the following options in the demographic survey: "heterosexual/straight" for sexual orientation, AND "cisgender" and "binary" for gender. All other participants were placed in the Rainbow category.

Separate groups were not created for the group comparisons by wellbeing score; rather regressions were used to avoid artificially categorising the wellbeing scores (see DeCoster et al, 2011

[5] Clark et al (2020) investigated masculinity as a predictor of MHL in adolescent males. Results varied with alignments to help-seeking such as peers (b=-0.08, ISE = 0.01, t = -5.71, p < .001) family (b = -0.15, SE = 0.02, 95 % CI [-0.20, -0.10]), and formal (b = -0.25, SE = 0.04, 95 % CI [-0.32, -0.17]). – this sentence doesn't make a lot of sense

for discussion of artificial categorisation and continuous alternatives).

3.5 Procedure

Participants followed the link to the information sheet (Appendix 5) from advertisements or otherwise shared with them (e.g., via school). The information sheet included: introduction to the researcher and the study; brief outline of the survey; participants rights; and confirmation of privacy rights and applicable data collection as detailed in the Ethics section below. The information sheet also provided contact details for youth-focussed mental health resources if participants felt uncomfortable about any aspect of the research; confirmed participants consented to the survey by proceeding to the survey questions; and confirmed the ethics approval and contact details for the researchers.

Once participants started the survey (included in appendix 6), they were asked demographic questions which also confirmed eligibility (by age and school year) and the ethnicity question. If participants selected an age outside of 16-19, they were directed to an end page thanking them for their interest, and confirming they are not eligible to complete the survey.

Eligible participants completed self-report measures including the Short Warwick-Edinburgh Mental Well-being Scale, Hua Oranga, and Mental Health Literacy Scale, followed by questions related to a vignette of a young person with social anxiety, and questions related to their social media and internet use. Finally, they were presented with the option to (a) enter the prize draw for one of four gift vouchers of $30, and (b) receive a summary of the study findings. If they selected Yes to either question, they were taken to a new survey to share their email address then thanked for their participation. If they selected No, they were presented with the end page thanking them for their participation and closing the survey.

The prize draw was conducted on 10 October 2023 using an online random number generator to select participants. Winning participants were contacted by email on the same day and asked to reply within 2 weeks to confirm the email address was correct. As one of the email

addresses bounced back, it was re-drawn for another participant. Once confirmed, gift vouchers were purchased online and emailed to the confirmed email addresses.

3.6 Measures

The full survey is included in appendix 6.

3.6.1 Demographics

To ascertain eligibility, participants answered questions relating to their age and current school year level. LGBTQ+ status was collected with open response and multiple-choice response questions related to sexuality and gender identity. Open response questions allowed participants greater freedom in expressing their identity, while the multi-choice options allowed for grouping by rainbow status. Ethnicity was also collected with five major ethnicity categories listed based on the New Zealand Census categorization (StatsNZ, 2019) plus an option to free write if their ethnicity was not listed.

3.6.2 Access to Mental Health Professionals

Two questions were included to measure whether participants had sought or received help for mental health challenges in the past. These were: “Have you ever SOUGHT professional help for mental health challenges in the past?“ and “Have you ever RECEIVED professional help for mental health challenged in the past?”. Response options for each question were ‘yes,’ ‘no,’ and ‘don’t know.’

3.6.3 Short Warwick-Edinburgh Mental Well-being Scale

The Short Warwick-Edinburgh Mental Well-being Scale (SWEMWS) is a 7-item version of the self-report questionnaire, the Warwick-Edinburgh Mental Well-being Scale (WEMWS; Shah et al., 2018; Tennant et al., 2007), which measures subjective wellbeing. The WEMBS was streamlined to create the SWEMWS using a Rasch measurement model, with 7 items removed (Ng Fat et al., 2017; Tennant et al., 2007). The SWEMWS is free to use but requires licensing which was obtained from the Warwick Medical School at the University of Warwick (see Appendix 7).

The SWEMWS provides statements about functional wellbeing with positive wording (for example, “I’ve been dealing with problems well”) and measures the frequency of each statement on a 5-item Likert-type scale scored from 1 (none of the time) to 5 (all of the time). The SWEMWS is scored by summing the individual item scores and transforming these scores based on the conversion table provided in the user guide into a metric score ranging from 7-35 (Stewart-Brown et al., 2009; Warwick Medical School, 2015). Higher scores denote better wellbeing, and scores have previously been categorised as ‘low’ (7–19.3); ‘medium’ (20.0–27.0); and ‘high’ (28.1–35) based on the means and standard deviations of an English population sample (Shah et al., 2018).

The SWEMWBS was identified as the best mental health and wellbeing measure for adolescents for use when using sum scores for mean comparisons (Black et al., 2023). The SWENWBS has shown good internal consistency across various groups (see Anthony et al., 2022) and strong correlation with comparison measures such as the General Health Questionnaire (GHQ-12; $\rho = -0.52$, $p < 0.001$) and the happiness index (EQ-VAS; $\rho = 0.40$, $p < 0.001$). Shah et al (2018) reported Cronbach’s alpha as excellent ($\alpha = 0.931$); for this study it was acceptable ($\alpha = 0.793$).

3.6.4 Hua Oranga

Hua Oranga (HO) is an outcome measure reflecting the four dimensions of Te Whare Tapa Whā: taha wairua (spirituality), taha hinengaro (mental health), taha tinana (physical health) and taha whanau (family and relationships) (Kingi, 2002; Kingi & Durie, 1999; McClintock et al., 2013). Created for Māori, by Māori, clinicians and whai ora (patient/ person seeking wellness) agreed this was culturally appropriate and easily administered (McClintock et al., 2013).

For each dimension, participants select the item which best reflects how they are feeling. Ratings of individual items (e.g., “I feel that my mental health is extremely good at present”) are made on a Likert-type scale from 1 (extremely good) to 5 (very bad). For the purposes of this study, a combined score was created using the mean score across the dimensions, with lower score indicating better overall wellbeing.

For this study, only the self-report whai ora schedule was used (option two from McClintock et al., 2011). Cronbach's alpha was acceptable (α = 0.708). As this is designed to be used alongside clinician and whanau feedback, there are no psychometric properties collected or reported for the whai ora schedule alone.

3.6.5 Mental Health Literacy Scale

The Mental Health Literacy Scale (MHLS) (O'Connor & Casey, 2015) is a 35-item questionnaire measuring the recognition of mental disorders (8 items), knowledge of risk factors and causes (2 items), knowledge of professional help (2 items), self-treatment (three items), sources of information (three items), stigma and negative attitudes toward mental illness (eight items) and positive attitudes toward mental illness (six items).

MHLS is scored by summing all items, giving a maximum score of 160 and minimum score of 35 (O'Connor & Casey, 2015). Higher scores denote better mental health literacy. Participants rate each item on Likert scale items, ranging from 1 (very unlikely, strongly disagree, very unhelpful, and definitely unwilling – depending on the specific question) to four (definitely willing, strongly agree, very likely, and very helpful).

The original psychometric assessment reported a final Cronbach's alpha for the 35 items of 0.873 (good) (O'Connor & Casey, 2015) which was similar for this study (α = 0.853; good).

3.6.6 MHL Vignette

To assess the application of MHL to a 'real life' example, participants read and responded to a vignette by Jorm et al (2007). This is a common method within the MHL literature that aims to test the application of mental health knowledge through recognition and recommended help-seeking (Jorm, 2019). Vignettes provide a brief description of a simulated situation or person in order to elicit conversation or responses around how a participant would respond in that situation (O'Dell et al., 2012).

The vignette in this study describes a 15-year-old that meets DSM-5 diagnostic criteria for social anxiety disorder and is designed to suggest the need for professional help (Jorm et al., 2007). I

modified the original vignette to be gender neutral by using the name 'Sam' and using the name in place of any pronouns. The vignette is followed by a series of questions related to recognizing mental distress, how worried they would be for Sam, how long it would take to improve, and whether Sam required help from someone else selected from Coles et al (2016). The questions included two open response questions (recognition of mental distress and help required) and two scale response questions (how worried, and how long to improve).

To analyse these responses, content analysis was undertaken to first code them into categories. This coding was conducted manually by two coders using excel. Another post-graduate level psychology student researcher assisted with coding to allow for interrater analysis. Interrater analysis using Cohen's Kappa statistic was performed to assess consistency between the raters and is reported in Table 5. The reviewers then met to finalise and agree the coding for each response before further analysis could be performed.

Participants were asked what parts of story helped them decide what was the matter with Sam. With the assistance of my supervisor, a registered clinical psychologist with over 10 years' experience diagnosing social anxiety, I divided the vignette into 11 clues to be used to identify Sam's distress[6]. The participants' open response answers were coded to these clues to allow for further analysis in separate columns using excel. In each column, we noted if the participant mentions that clue (1=noted, 0=not noted). If participants noted something else, these were noted as Other, with the text noted for further review.

Responses to the question "what is the matter with Sam?" were coded to a numerical score similarly to the method described by Altweck et al (2015) and Wright et al. (2007). Responses were coded to the key word(s) of their content, based on accuracy of response. Participants with non-

[6] The identified clues from the vignette were: new school; Sam has become even more shy than usual; only one friend; would really like to make more friends; scared of doing or saying something embarrassing when around others; rarely says a word in class; becomes incredibly nervous, trembles, blushes, and feels like vomiting if asked to answer a question or speak in front of the class; quiet if new people come over; never answers the phone; refuses to attend social gatherings; knows these fears are unreasonable, but can't seem to control them and finds them really upsetting

mental health related responses were coded 0, mental health related responses that did not include anxiety were rated 1, naming anxiety was rated 2, and naming social anxiety was rated 3. If responses incorporated more than one keyword, they were amended to select the highest score, for example the response “anxiety or social anxiety” would be coded ‘3’ for social anxiety.

Finally, participants were asked if they thought Sam needed someone else to help with their problems. These responses were coded as either Professional, Non-Professional or Missing. As with the “what is the matter with Sam” question, if responses incorporated more than one keyword, they were amended to select the highest score, meaning responses were rated professional if they mentioned any professional help required, even if non-professional suggestions were also made.

3.6.7 Internet and Social Media Use

Participants completed 11 items related to social media use and interaction. There are no universal or validated measures in the literature measuring social media use (Trifiro & Gerson, 2019), and this study was investigating frequency of use, I developed novel items and where possible, adapted questions or responses from recent research. The full items are included in the survey presented in Appendix 6.

Items relate to frequency of internet use, including social media, gaming or communicating with friends (1 item, amended to reflect frequency of use from Pretorius, Chambers, Cowan, et al., 2019); whether participants have previously searched online for mental health information (1 item, question adapted from Pretorius, Chambers, Cowan, et al., 2019); frequency of using specific platforms (1 item); frequency and method for viewing or accessing messaging about mental health (5 items); who participants see mental health posts from online (1 item, responses adapted from Byron et al., 2017; Pretorius, Chambers, Cowan, et al., 2019); what kind of posts they are seeing (1 item) and examples of websites or influencers used for mental health information (1 item, question adapted from Gowen, 2013). Frequency scales were set to a seven-point scale from 1 (never) to 7 (multiple (>3) times daily) for consistency.

3.7 Data Analysis

Data analysis was completed using SPSS Statistics (Version 29, IBM Corp, 2023).

3.7.1 Data Cleaning and Preparation

Before data analyses were conducted, the data was first cleaned to remove pilot data and any listwise deletions as detailed in the Participants section. Where necessary, data was scored and coded as described in the measures above.

3.7.2 Data analysis plan

MHLS scores were used for the group differences analysis for Research Question 1. Rainbow status group differences (H1) were assessed using independent samples *t*-test. Regressions were used to assess group differences by wellbeing scores to avoid artificial categorisation (H2). Linear regressions were run for the SWEMWBS to assess any impact on MHLS scores.

For Research Question 2, frequencies and descriptive statistics were run for the social media use (e.g. access and interaction) questions (H3-H9). To examine group differences by rainbow status, independent samples *t*-tests and chi-square tests of independence were run (H10). As noted above, regressions were used for the wellbeing scores (H11). There were three ordinal and two binary variables included within the regression analysing the relationship between wellbeing scores and social media use (access and interaction). For the purposes of this regression, the ordinal variables were treated as continuous as discussed in the literature (Pasta, 2009; Robitzsch, 2020; Williams, 2019). Simple linear regressions were run to assess the impact of wellbeing scores on frequency online, frequency of active interaction, and frequency of passive interaction. For the binary response questions, binary logistic regressions were run to analyse if wellbeing scores impacted whether participants had ever looked online for access or whether they follow influencers who post about MH (H11).

For Research Question 3 (H12 and H13), to assess if access to and interaction with online MH messaging predicts MHLS scores, linear regressions were conducted for each variable: frequency online and ever looked online (access); and frequency of active interaction, frequency of passive interaction, and whether participants follow influencers who post about MH (interaction). These five

variables were then also entered into a multiple regression to further assess their impact on MHLS scores.

3.8 Ethics

3.8.1 Ethics Approval

This project was approved by the Massey University Human Ethics Ohu Matatika 3, Application OM3 23/06 (see Appendix 1). The project was submitted on 20 February 2023 and was originally considered and provisionally approved during their meeting on 2 March 2023. The initial feedback was returned to me on 26 April 2023 requesting minor modifications to the documents, such as being more explicit about the aims of the project and the analysis of group differences by LGBTQIA+ status. Once these we returned with some additional commentary provided to the committee, full approval was confirmed to me on 25 May 2023.

3.8.2 Specific concerns

As this study presented representations of, and asked questions about, mental distress, a significant issue was potential emotional discomfort or distress for those with lived experience of mental health challenges (self, close friends, or whānau) triggered by the content of the survey. To combat this, the survey involved voluntary participation, and provides information and links to free and immediate support services. During the informed consent procedure, participants were informed of the risks and benefits of the research, as well as their rights as participants, so that before participating they were aware of the theme of the survey and their options to withdraw should they need to. Importantly, the survey did not include any questions about suicide or self-harm as these can be particularly distressing for participants and may require clinical intervention which were not possible within the scope and resources of this project. Finally, the survey length was shortened as much as practicable to minimise the emotional toll and fatigue on participants.

The second key concern is researcher safety. To address this, I maintained regular contact with my supervisor and am developing my reflective practice and self-care so that I can identify when I am becoming overwhelmed and take breaks, or amend my other responsibilities as required. I

enjoyed access to Massey counsellors for additional mental health support and a supportive network of friends and family who can support my wellbeing.

The third main issue was confidentiality. While participants and schools may hold concerns around confidentiality, the survey did not collect any identifiable information in the main survey as it was completed online anonymously. As our initial plan, and ethics approval, was for participants are recruited from specific schools, we made sure that there was no record of which school each participant is from to maintain as much confidentiality as possible. We were particularly conscious that LGBTQ+ status is sensitive and did not want to inadvertently 'out' any participants (i.e., disclose participants' rainbow status); therefore, if schools did want to receive a presentation or report on this survey, only group-level averages were shared as appropriate.

The only identifiable information collected in the survey was for the voluntary voucher draw, which was collected on a separate Qualtrics link and stored separately from the survey responses. Access to this data was limited to the main researcher and supervisor and stored on password-protected software. This data was not accessed or reviewed until it was time to complete the prize draw, preventing any accidental downloading or storage of this data. Separate links and storage mean there is no risk of matching participant information and survey responses. Any other identifiable information collected throughout the research process, such as contact people for the schools, is publicly available on school websites or other public databases.

Finally, cultural safety was a significant concern for this research, as it is for any research undertaken in Aotearoa. To maximise cultural safety and comfort, the research was reviewed by Dr Elle Brittain, (Ngāti Rākaipaaka, Ngāti Kahungunu ki Te Wairoa, and Rongomaiwahine; Lecturer in Psychology). To analyse and discuss the aspects of this project that may impact rangatahi Māori participants, I created slides addressing the four tikanga-based (Māori customs/practices) principles of Te Ara Tika: Mana (justice and equity), Whakapapa (relationships), Manaakitanga (cultural and social responsibility) and Tika (research design) (Hudson et al., n.d.). Specifically, we reviewed the

project recruitment plan and materials to ensure maximum accessibility for Māori participants and other minority participants.

I incorporated culturally informed models of wellbeing by using the Hua Oranga questionnaire which measures wellbeing in line with Te Whare Tapa Whā (Durie, 1998; Kingi & Durie, 1999). Te reo Māori was incorporated in the information sheet and advertising materials where appropriate to recognise the special place for Māori in AoNZ research.

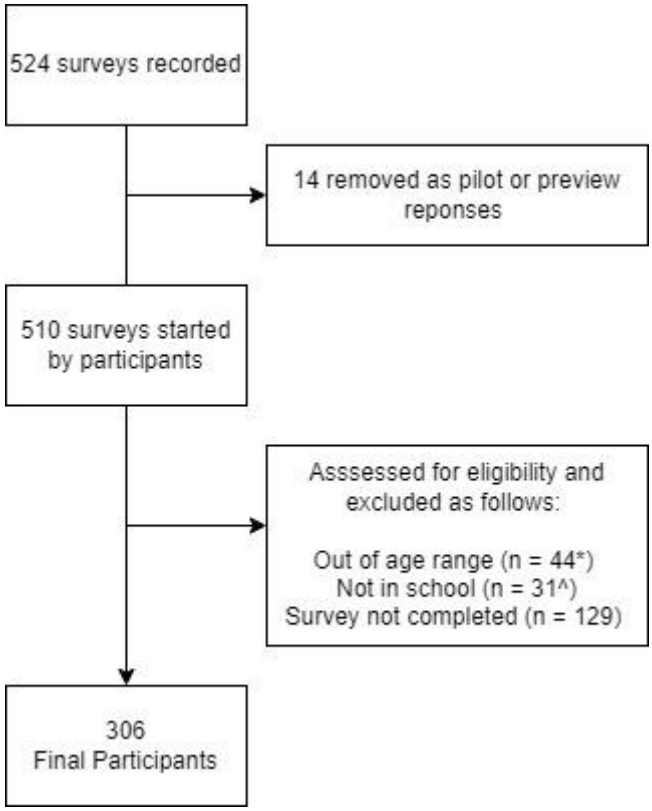
3.8.2 Consultation Process

Before submitting the ethics application, the project was thoroughly discussed with my supervisor, rainbow researcher Dr. Ilana Seager van Dyk, to address these concerns. This included reviewing and discussing the advertising, survey, sample, and recruitment methods and how we can minimise any ethical issues, such as focusing the study on older students (aged 16-19) and providing resources for participants to access if the survey triggered any discomfort. Other ethical issues, such as confidentiality, and data management were also discussed with my supervisor. These discussions referenced both the Massey University Code of Ethical Conduct for Research, Teaching and Evaluations Involving Human Participants and Te Ara Tika Guidelines for Māori research ethics (Te Ara Tika; Hudson et al., n.d.) and content from relevant postgraduate papers (Professional Practice in Psychology, and Research Methods).

The project was also discussed with other members of the Massey University PRIDE research lab, all of whom were completing post-graduate research projects, and many of whom held Rainbow identities themselves.

Figure 1

Flow diagram of excluded responses and final sample size.



Note: Flow diagram of excluded responses and final sample size.

*Participants excluded by age included: no age provided (n = 17); under 16 (n = 12), nonsense responses (n = 4); over 19 (n = 11). ^ Not in school included both not in school (n = 17) and university (n = 14).

Table 1.

Demographic Characteristics of the Sample (N = 306)

Sample Characteristics	*n*	*%*
Year Level		
Year 11	55	18
Year 12	156	51
Year 13	95	31
Ethnicity		
Pākehā	227	74.2
Māori	60	19.6
Pacifica	20	6.5
Asian	48	15.7
Latin American/African/Middle Eastern	10	3.3
Not listed[a]	24	7.8
Sexual Orientation Category (n = 304)		
Heterosexual/straight	119	38.9
Rainbow	162	52.9
Neither	13	4.2
Unsure	10	3.3
Self-described Sexual Orientation^		
Abrosexual	1	0.33
Aromantic, aromantic & homosexual, aromantic asexual/aroace	4	1.31
Asexual, asexual/heteromantic	2	0.65
Bi curious	2	0.65
Biromantic, biromantic;homosexual	2	0.65
Bisexual, bi, bisexual/asexual, bisexual/biromantic	77	25.16
Demisexual	1	0.33
Diamoric	1	0.33
Gay	8	2.61
Gender categories[#]	7	2.29
Heterosexual, heterosexual/straight	39	12.75
Homosexual	2	0.65
Lesbian	17	5.56
Omnisexual	1	0.33
Panromantic + asexual, panromantic, grey asexual (little to no sexual attraction or desires)	2	0.65
Pansexual, pansexual and aroace, pansexual, gay(questioning)	20	6.54
Private	1	0.33
Queer*	22	7.19
Questioning, undecided	3	0.98
Rainbow category	1	0.33

Sample Characteristics	*n*	*%*
Straight	74	24.18
Straight, demi-Sexual	1	0.33
Takatāpui	1	0.33
Unlabelled	5	1.63
Unsure, not sure	7	2.29
Missing	6	1.96
Intersex (*n* = 302)		
No	259	84.6
Yes	4	1.3
I don't understand the question	39	12.7
Gender binary category (n = 299)		
Non-binary	42	14
Binary	241	80.6
Neither	13	4.2
Unsure	3	1
Missing	7	2.3
Gender category		
Cisgender	234	76.5
Trans/transgender	56	18.3
Neither	11	3.6
Unsure	4	1.3
Missing	1	0.3
Self-described gender identity ^		
Agender	4	1.31
Cis male	1	0.33
Cisgender female	4	1.31
Demi-girl	1	0.33
Demiboy	2	0.65
Female, girl, woman, she/her	203	66.34
Gender fluid, fluid	12	3.92
Genderqueer	4	1.31
Male	42	13.73
Non-binary, non-binary/transmasc	10	3.27
Trans female	1	0.33
Trans male, trans boy, trans man, transgender (FTM), transgender male	11	3.59
Transgender	1	0.33
Transmasculine, trans masc non binary	4	1.31
Whakawahine	1	0.33
Unsure	4	1.31
Missing	1	0.33

Note. Participants could select more than one ethnicity option; therefore, percentages do not sum to 100%.

[a]Not listed includes Afghan, Austrian, British, Dutch, Fijian Indian, German, Greek, Hungarian, Hispanic, Indian, Jewish, Moriori, North American, Pathan (Pashtun), Scottish.

^For the purposes of this table, we have collapsed separate self-descriptions into categories based on our understanding of terms. These collapses are noted using OR to combined responses. Some

categories included multiple spellings of the same category. Non-standard spellings have been omitted for simplicity.
#Gender categories includes terms more commonly associated with gender including cisgender, girl, female, male/female
*queer includes responses "queer/unlabelled" "queer or if i label then bisexual" "queer (interacting with a variety of lgbtqia+) content online"

4. Results

4.1 Research Question 1: Do MHL scores vary by wellbeing scores or rainbow status?

4.1.1 Hypothesis 1: Rainbow students have higher MHLS scores than non-Rainbow students.

An independent samples t-test was performed to evaluate whether there was a difference between the MHLS scores of Rainbow vs non-Rainbow groups (see Table 2). The results indicated that Rainbow participants (M = 131.51, SD = 10.97) had significantly higher MHLS scores than non-Rainbow participants (M = 125.10, SD = 13.44), t(301) = 4.57, p <.001, g = -0.527. This supports the hypothesis of higher MHLS scores for Rainbow students.

For the vignette, 62.1% of the total sample correctly identified social anxiety as noted in Table 3. Only 10.5% of the total sample did not identify that Sam was experiencing a mental health issue. A chi-square test of independence was performed to evaluate the relationship between Rainbow status and correct recognition of social anxiety or anxiety in the MHL vignette. The relationship between these variables was significant, $\chi 2$ (1, N = 306) = 10.85, p <.001, such that Rainbow participants were more likely to correctly identify Sam's issue as social anxiety or anxiety than non-rainbow participants.

4.1.2 Hypothesis 2: Participants with lower wellbeing scores have higher MHLS scores.

A simple linear regression analysis was conducted to evaluate the extent to which wellbeing scores could predict MHLS scores as shown in Table 4. In addition to the regression analysis, a scatterplot with the fitted regression line were examined to ensure model assumptions were met. The residuals were not normally distributed (Shapiro-Wilk W = .877, p = .006), and the residuals appeared to be independent (Durbin-Watson D = 175). There was no relationship between the wellbeing scores (SWEMWBS) and MHLS scores, R^2 = 0.004, (F(1,300) = 1.335, p = .249).

4.1.3 Post-hoc analysis – Correlation of vignette recognition and MHLS scores.

In addition to the analyses above, a point-biserial correlation was run to determine the relationship between correct recognition in the vignette (social anxiety or anxiety) and MHLS scores. Inspection of the box plot identified three outliers; however, these have not been removed. These

appear to be genuine unusual scores based on a review of the answers provided for the MHLS which do not show obvious irregularity, for example they are not repeating the same number(s) in a pattern (Laerd Statistics, n.d.). Homogeneity of variances was confirmed using Levene's test for equality of variance (p = .200). There was a statistically significant but weak correlation between correct recognition and MHLS scores, $r_{pb}(301) = .306$, $p = <.001$, with higher mean MHLS scores associated with correct recognition (129.93 ± 11.55 versus 117.46 ± 15.01).

4.2. Research Question 2: How do AoNZ young people access and interact with MHI and are there group differences in these behaviours?

Tables 2 and 6 report the results for access and interaction with mental health information online as well as the group differences by Rainbow status.

4.2.1 Hypothesis 3: Most students (>70%) have looked up MHI online.

Most participants (88.6%) reported they had previously looked up MHI online. For rainbow participants, this was even higher at 95.8%, with only 4.2% denying having looked up MHI online. Based on this sample, the hypothesis (70%) underestimated the proportion of young people accessing MHI online.

4.2.2 Hypothesis 4: Young people would passively see MHI on social media weekly or more.

Most participants (77.8%) report being shown MH content on social media weekly or more often, in line with my hypothesis. By contrast, only 3.9% of the full sample reported never being shown MHI on social media and 17% reported seeing MHI less than weekly.

4.2.3 Hypothesis 5: Young people would be actively searching for MHI less than weekly.

Participants were asked how often they engage in active seeking of MHI on social media (as compared to looking up MHI anywhere online). A majority of the sample (80.4%) reported active seeking less than weekly or less, with 38.6% never using social media to look for mental health information, and 41.8% doing so 'less than weekly.' Only 10.5% of the total sample reported specifically seeking out MHI on social media 'every few days or more.'

4.2.4 Hypothesis 6: Young people would be passively seeing MHI on social media more often than actively searching.

As shown in the previous paragraphs, the frequency of passively seeing posts related to MHI was higher than for actively seeking, as expected.

4.2.5 Hypothesis 7: Young people are mostly seeing MH posts by people they know or social media influencers.

When asked about the types of creators whose MH posts are in their social media feeds, 67% reported seeing posts by influencers or celebrities. This was the most reported source of content, followed by mental health organisations (59.2%), and then people they know talking about their own mental health (50.7%). My hypothesis was therefore partially correct.

4.2.6 Hypothesis 8: Young people are mostly seeing MH posts reflecting personal stories and awareness campaigns.

When considering the content of MH posts they see and interact with online, most participants report seeing personal stories (66%). This was followed by 59.8% of participants reporting seeing tips for maintaining good mental health, and 55.9% reporting seeing posts about specific symptoms. Awareness campaigns were reported by 43.1% of participants. Again, the hypothesis was partially correct, as personal stories were most reported.

4.2.7 Hypothesis 9: Young people are mostly seeing MHI on Instagram and TikTok.

With regards to the social media apps used in general, Instagram was the most popular app, with 79.4% of participants using it daily or more. Table 8 provides the results for all other platforms. Table 9 provides the number of participants using each app for active or passive interaction with online MHI. Instagram was the most frequently used app for both active and passive use for MHI with 38.6% and 70.3% of participants respectively. TikTok was the second most used app for MHI with 36.3% of participants using it for active interaction and 54.2% for passive interaction. While not considered a social media app, Google was the third most used app for active searching for online MHI (16.3%).

4.2.8 Hypothesis 10: The rainbow group would access and interact with MHI more often than the non-rainbow group.

A chi-square test of independence was performed to evaluate the relationship between Rainbow status and ever looking up MHI online. The relationship between these variables was significant, $\chi 2$ (1, *N = 301*) = 13.64, *p* = <.001, indicating that Rainbow participants were more likely than non-rainbow participants to have ever looked up MHI online, as hypothesised.

However, an independent samples *t*-test (see Table 2) indicated that there was no significant difference between the frequency of active interaction (that is, looking up MHI on social media) by the rainbow group (*M* = 2.01, *SD* = 1.11) and non-rainbow group (*M* = 1.6, *SD* = 1.37), *t* (300) = 0.89, *p* = 0.374., *g* = -0.192.

Independent samples *t*-tests were also performed to compare the frequency of active searching and frequency of passive interaction/seeing MHI while browsing for by Rainbow status as shown in R1. Neither of these returned a significant result. Similarly, the chi-square test of independence performed to evaluate the relationship between Rainbow status and following influencers was not significant (see Table 7).

Only the access questions (frequency online and ever looked up MH information online) showed significant group differences. These results show higher rates of access for the rainbow group than the non-rainbow group, therefore supporting the hypothesis regarding access. As none of the interaction questions (measured by whether they follow influencers that share MHI, their frequency of active searching and frequency of passive interaction/seeing MHI while browsing) showed significant group differences, the data is unable to support the hypothesis regarding interaction.

4.2.9 Hypothesis 11: Those with lower wellbeing scores will access and interact with MHI more often than those with higher wellbeing scores.

Binary logistic regressions were used to analyse the relationship between wellbeing scores (as measured by the SWEMWBS) and the binary items related to access and interaction with online

MHI as reported in Table 10. One model was used to predict if participants had ever looked up MHI on social media (yes/no) based on the independent variable of the SWEMWBS score. This model was not statistically significant, χ^2 (1) = 0.722, *p* = .379.

As reported in Table 11, separate linear regressions were used to analyse the impact of wellbeing (as measured by the SWEMWBS) on participants' frequency online, frequency of active interaction, and frequency of passive interaction respectively. For active interaction, a significant regression was found (F (1,299) = 4.57, *p* = .033) with wellbeing scores explaining 1.5% of the variance in the frequency of active seeking of mental health content on social media. Participants with higher SWEMWS wellbeing scores reported less frequent interaction with online MHI.

A significant regression was found regarding passive interaction (F 1,299) = 4.57, p = <.001) with wellbeing scores explaining 3.8% of the variance in the frequency of passive seeking and suggesting participants with higher SWEMWS wellbeing scores tended to report less frequent passive interaction with online MHI.

The data supports the hypothesis that lower wellbeing scores are associated with higher access and interaction with online mental health information, including on social media.

4.3. Research Question 3: Does access to and interaction with online MHI predict MHL scores?

Linear regressions were conducted to assess if access and interaction with mental health messaging online predicted mental health literacy as reported in Table 11.

4.3.1 Hypothesis 12: Participants with greater access to MHI on social media will have higher MHL scores than those with lower access.

Simple linear regressions were run for the access variables of frequency online and whether they ever looked for mental health information online. Each variable was run independently to assess their influence on MHLS scores. Ever having looked online for MHI was largest predictor explaining 9.1% of the variance in MHL scores (*F*(1,299) = 29.861, *p* = <.001, R^2 = .09). Frequency online also predicted MHLS scores explaining 2.4% of the variance (*F*(1,298) = 7.343, *p* = 0.007, R^2 = .02).

Both regression models support the hypothesis that those with higher access have higher MHL scores.

4.3.2 Hypothesis 13: Participants with greater interaction with MHI on social media (i.e., follow influencers, frequency active and frequency passive interaction) will have higher MHL scores than lower interaction.

As above, independent simple linear regressions were run for the influence of interaction variables (active interaction, passive interaction and whether they follow influencers) on MHLS scores. Statistically significant regressions were found for passive interaction ($F(1, 300) = 4.67$, $p = .031$, $R^2 = .015$ and following influencers who regularly post about mental health ($F(1, 301) = 23.4$, $p < .001$, $R^2 = .07$), but not active interaction with online MHI ($F(1, 30) = 2.23$, p .136, $R^2 = .007$).

Accordingly, two out of three models support the hypothesis that those with higher interaction with online MHI have higher MHL scores.

4.3.3 Post hoc analysis: Multiple regression assessing if access and interaction with online MHI predicted MHL

In addition to the independently run simple linear regressions, multiple regression was run including the same independent variables as above: frequency online, frequency of active interaction, frequency of passive interaction, whether ever looked up MHI on social media and whether follow influencers who post about MH. Independence of residuals was assessed by a Durbin-Watson statistic of 1.89. There was no evidence of multicollinearity, as assessed by tolerance values greater than 0.1. There were four studentized deleted residuals greater than ±3 standard deviations, but no leverage values greater than 0.2, or values for Cook's distance above 1. The assumption of normality was met, as assessed by a Q-Q Plot. The multiple regression model statistically significantly predicted MHLS scores, $F(5, 292) = 10.71$, $p < .001$, adj. $R^2 = .14$). Only the dichotomous variables (ever looked up MH online and whether follow influencers who post about MH) added statistically significant variance to the prediction, $p < .001$. Regression coefficients and standard errors can be found in Table 12.

These regressions support the hypotheses that those with higher access or higher interaction with online MHI have higher MHL than those with lower access or interaction.

Table 2.

Descriptive Statistics and Group Differences for Social Media Use for Mental Health Information, Mental Health Literacy, and Wellbeing

	Total			Rainbow			Non-Rainbow					
	n	***M***	***SD***	***n***	***M***	***SD***	***n***	***M***	***SD***	***t***	**df**	**Hedge's *g***
Social Media use for Online MHI												
Frequency online [a]	300	6.56	0.85	166	6.63	0.74	134	6.47	0.96	1.65	298	-0.19
Frequency active interaction [b]	302	1.96	1.12	166	2.01	1.10	136	1.60	1.14	0.89	300	-0.10
Frequency passive interaction [c]	302	3.99	1.54	165	4.04	1.51	137	3.93	1.58	0.61	300	-0.07
MHL												
MHLS	303	128.6	12.54	166	131.5	10.97	137	125.1	13.44	4.57[d]	301	-0.53
Vignette – Recognition [e]	306	1.42	10.05	166	1.99	7.92	140	0.74	12.1	1.08	304	0.37
Wellbeing												
SWEMWBS	305	19.09	3.81	166	18.57	3.22	139	19.72	4.34	2.59	250.10	0.31
Hua Oranga	306	12.28	3.04	166	11.78	2.71	140	12.89	3.30	3.17	269.10	0.37

Note. *N* = 306 (Rainbow *n* = 166; non-Rainbow *n* = 140) . Frequency is measured on a 7-point scale from 1 (Never) to 7 (Multiple (>3) times daily); Higher score indicates more frequent use. MHLS = Mental Health Literacy Scale (O'Connor & Casey, 2015). Sum score, higher score indicates better mental health literacy; Minimum score: 87; Maximum Score: 160. SWEMWBS = Short Warwick-Edinburgh Mental Well-Being Scale (Ng Fat et al., 2017) metric score, higher score indicates better wellbeing; Minimum score: 7; Maximum Score: 35; Metric Score calculated as per conversion table; Higher score indicates better wellbeing. Hua Oranga Sum score across four domains, lower score indicates better wellbeing. Minimum score 4, Maximum score 20.

[a] Frequency online including social media, communication, and gaming. [b] Active interaction refers to specifically looking for MHI online. [c] Passive interaction refers to participants seeing posts in their feed/by the algorithm [d] Equal Variances not assumed as Levene's test returned significant result. [e] Correct recognition reflects the numerical coding of open responses; Higher score is more accurate; 0 = non-mental health, 1 = mental health, 2 = anxiety, 3 = social anxiety.

Table 3.

Recognition of Social Anxiety by Rainbow status

	Total		Rainbow		Non-Rainbow	
	n	%	*n*	%	*n*	%
Social Anxiety	190	62.1	116	69.9	74	52.9
Anxiety	80	26.1	40	24.1	40	28.6
Mental Health	1	0.3	1	0.6	0	0
Non-Mental Health	32	10.5	8	4.8	24	17.1
Missing	3	1	1	0.06	2	1.4

Note. Responses to the question "what is the matter with Sam?" were coded similarly to the method described by Altweck et al (2015) and Wright et al. (2007). Non-mental health related responses were coded 0, mental health related responses (not including anxiety) were rated 1, naming anxiety was rated 2, and naming social anxiety was rated 3. If responses incorporated more than one keyword they were coded to the highest applicable score, for example the response "anxiety or social anxiety" would be coded '3' for social anxiety.

Table 4.

Linear Regressions of association between social media use for online MHI, MHL, and SWEMWBS scores

	B	*SE*	95% CI	ß	*t*	R Square	Durbin-Watson	F	*p* (F)	df
Social Media use for Online MHI										
Frequency online	-0.03	0.013	[-.057, -.005]	-0.14	-2.35	0.018	2.263	5.52	0.019	1, 297
Active Interaction	-0.04	0.017	[-.071, -.003]	-0.12	-2.14	0.015	2.064	4.57	0.033	1, 299
Passive Interaction	-0.08	0.023	[-.127, -.034]	-0.20	-3.44	0.038	2.179	11.82	<.001	1, 299
MHL										
MHLS	-0.22	0.194	[-.607, .158]	-0.07	-1.16	0.004	1.762	1.34	0.249	1, 300

Note. *N* = 306 (Rainbow *n* = 166; non-Rainbow *n* = 140) Frequency is measured on a 7-point scale from 1 (Never) to 7 (Multiple (>3) times daily); Higher score indicates more frequent use. MHLS = Mental Health Literacy Scale (O'Connor & Casey, 2015). Sum score, higher score indicates better mental health literacy; Minimum score: 87; Maximum Score: 160. SWEMWBS = Short Warwick-Edinburgh Mental Well-Being Scale (Ng Fat et al., 2017) metric score, higher score indicates better wellbeing; Minimum score: 7; Maximum Score: 35; Metric Score calculated as per conversion table; Higher score indicates better wellbeing.

[a] Frequency online including social media, communication, and gaming. [b] Active interaction refers to specifically looking for MHI online. [c] Passive interaction refers to participants seeing posts in their feed/by the algorithm

Table 5.

Interrater agreement for open response coding of the MHL vignette

	Kappa	Asymptotic Standard Error	Lower 95% CI	Upper 95% CI	*p*	Agreement level
Vignette Clues[a]						
New school	0.870	0.043	0.786	0.954	<.001	near perfect
Sam has become even more shy than usual	0.872	0.033	0.807	0.937	<.001	near perfect
Only one friend	0.816	0.051	0.716	0.916	<.001	near perfect
Would really like to make more friends	0.810	0.043	0.726	0.894	<.001	near perfect
Scared of doing or saying something embarrassing when around others	0.613	0.042	0.531	0.695	<.001	substantial
Rarely says a word in class	0.856	0.035	0.787	0.925	<.001	near perfect
Becomes incredibly nervous, trembles, blushes, and feels like vomiting if asked to answer a question or speak in front of the class	0.649	0.043	0.565	0.733	<.001	substantial
Talkative with family but quiet if new people come over	0.717	0.040	0.639	0.795	<.001	substantial
Never answers the phone	0.945	0.022	0.902	0.988	<.001	near perfect
Refuses to attend social gatherings	0.820	0.036	0.749	0.891	<.001	near perfect
Knows these fears are unreasonable, but can't seem to control them and finds them really upsetting	0.785	0.043	0.701	0.869	<.001	substantial
Other	0.373	0.066	0.244	0.502	<.001	fair
What is the matter with Sam?[b]	0.988	0.009	0.970	1.006	<.001	near perfect
Professional Help[c]	0.980	0.120	0.745	1.215	<.001	near perfect

Notes: N = 306. The vignette and questions were adapted from Jorm et al (2007). Responses were manually coded in excel by the researcher and a post-graduate level psychology student researcher.

[a]Participants' open responses were coded to the 11 identified clues which were selected with the assistance of my supervisor. Responses were coded with 1 if the clue was noted in the response or 0 if not noted.

[b]Responses to the question "what is the matter with Sam?" were coded to a numerical score similar to Altweck et al (2015) and Wright et al. (2007). Non-mental health related responses were coded 0, mental health related responses that did not include anxiety were rated 1, naming anxiety was rated 2, and naming social anxiety was rated 3. If responses incorporated more than one keyword, they were amended to select the highest score, for example the response "anxiety or social anxiety" would be coded '3' for social anxiety.

[c]Participants were asked if they thought Sam needed someone else to help with their problems. These responses were coded as either Professional, Non-Professional or Missing. If responses incorporated more than one keyword, they were amended to select the highest score, meaning responses were rated professional if they mentioned any professional help required, even if non-professional suggestions were included.

Table 6.

Frequency and types of MHI accessed on social media by Rainbow status

Variables	Total		Rainbow		Non-Rainbow	
	n	**%**	***n***	**%**	***n***	**%**
Social media use for Online MHI						
Frequency online						
Never	1	0.3	0	0.0	1	0.7
Less than weekly	0	0.0	0	0.0	0	0.0
Weekly	1	0.3	1	0.6	0	0.0
Every few days	5	1.6	2	1.2	3	2.1
Daily	35	11.4	14	8.4	21	15.0
Two to three times per day	37	12.1	23	13.9	14	10.0
Multiple (>3) times daily	221	72.2	126	75.9	95	67.9
Missing	6	2.0	0	0.0	6	4.3
Frequency active interaction[a]						
Never	118	38.6	58	34.9	60	42.9
Less than weekly	128	41.8	75	45.2	53	37.9
Weekly	24	7.8	16	9.6	8	5.7
Every few days	20	6.5	10	6.0	10	7.1
Daily	8	2.6	5	3.0	3	2.1
Two to three times per day	2	0.7	1	0.6	1	0.7
Multiple (>3) times daily	2	0.7	1	0.6	1	0.7
Missing	4	1.3	0	0.0	4	2.9
Frequency Passive interaction[b]						
Never	12	3.9	6	3.6	6	4.3
Less than weekly	52	17.0	25	15.1	27	19.3
Weekly	40	13.1	23	13.9	17	12.1
Every few days	91	29.7	53	31.9	38	27.1
Daily	60	19.6	30	18.1	30	21.4
Two to three times per day	25	8.2	17	10.2	8	5.7
Multiple (>3) times daily	22	7.2	11	6.6	11	7.9
Missing	4	1.3	1	0.6	3	2.1
Creators / Who posted MHI						
Mental Health Organisations	181	59.2	103	62.0	78	55.7
Non-Mental Health Organisations/Brands	103	33.7	57	34.3	46	32.9
Influencers/Celebrities	205	67.0	115	69.3	90	64.3
People you know posting about own mental health	155	50.7	92	55.4	63	45.0
People you know reposting from other accounts	114	37.3	65	39.2	49	35.0
Other [c]	13	4.2	6	3.6	7	5.0

Variables	Total		Rainbow		Non-Rainbow	
	n	%	*n*	%	*n*	%
Types of Posts						
Personal Stories	202	66	107	64.5	95	67.9
Awareness campaigns e.g., Mental Health Awareness Week, Pink Shirt Day	141	43.1	75	45.2	66	47.1
Information about symptoms or specific mental illness (e.g., depression or anxiety)	171	55.9	105	63.3	66	47.1
Information about places to get help	92	30.1	54	32.5	38	27.1
Information about the mental health of specific groups (e.g., LGBTQIA+ or other groups)	118	38.6	96	57.8	22	15.7
Tips for maintaining improving or maintaining good mental health (e.g., self-care suggestions)	183	59.8	102	61.4	81	57.9
Other [d]	15	4.9	11	6.6	4	2.9

Note. . *N* = 306 (Rainbow *n* = 166; non-Rainbow *n* = 140)

[a] Active interaction refers to specifically looking for MHI online. [b] Passive interaction refers to participants seeing posts in their feed/by the algorithm.

Percentages for Who has posted and Types of Posts relate to percentage of the sample for each category but do not sum to 100 as participants could select as many as applied.

[c] Other categories include: Influences, bashar, tarot readers (n = 1); Islamic posts (n = 1); It's hard to explain, there's a gore art hashtag I follow, "guro" and there's alot of people who vent about their mental health problems. Usually met with comments saying "me fr" or "real" or "SHES JUST LIKE ME!" other than the clear signs of mental illness throughout the tags it's a small community and always treat each other kindly. (n = 1); Meme accounts (n = 1); Other people in general (n = 1); Professionals providing advice (n = 1); Psych2go (n = 1); Random people “random people I don’t know posting about their mental health”, “randoms posting about mental health. Men’s mental health awareness. Things like that”. “Random internet users, just like anyone else.” (n = 3); Recover account of people I follow (I guess an influencer or sorts?) (n = 1); Youtubers (n = 1).

[d] Other categories include: Advertisement (n = 1); “As bad as it sounds, sometimes when my mental health is really bad I tend to interact with other videos that might teach you self destructive habits or show people at their lowest weights etc etc I know it's not good I don't need your mental lecture” (n = 1); don’t interact (n = 1); ED recovery (n = 1); “I have no clue what this means” (n = 1); “Influencers trying to be inspirational” (n = 1); “Information about how to relieve symptoms” (n = 1); “It's mostly how to be a better person like "sigma" male stuff which I dislike do I skip most. Some personal stories tho. I connect more personally because I want to know how others can get thru some things” (n = 1); “its kinda similar to another option but i have also seen tops from dentists/gps etc on how to try to improve physical health if going through a depressive episode e.g dental care; mouth wash; floss; nice tasting toothpaste so that it might be something people look forward to etc” (n = 1); “Just there depression. And unaliveing thoughts” (n = 1); none (n = 2); “things that I can relate to” (n = 1); “Usually vent art” (n = 1); Venting (n = 1).

Table 7.

Frequencies and Chi-Square Results for Binary Items Regarding Social Media Use for MHI and MHL Vignette

	Total		Rainbow		Non-Rainbow			
	n	%	*n*	%	*n*	%	χ2	df
Access and Interaction with online MHI								
Ever looked up MHI online							13.64*	1
No	30	9.8%	7	4.2	23	17		
Yes	271	88.6%	159	95.8	112	83		
Missing	5	1.6%						
Follow Influencers regularly posting about MH							0.93	1
No	128	42.2	66	39.8	62	45.3		
Yes	175	57.8	100	60.2	75	54.7		
Vignette								
Correct Recognition [a]							10.85*	1
Yes	273	89.2	157	94.6	116	17.1		
No	33	10.8	9	5.4	24	82.9		
Suggested Help								
Professional	210	68.6	113	68.1	97	69.3	0.004	1
Non-Professional	46	15	25	15.1	21	15		
Missing	50	16.3	28	16.9	22	15.7		

Note. N = 306 (Rainbow *n* = 166; non-Rainbow *n* = 140)

[a] Correct recognition for the vignette – yes includes the coded responses of social anxiety (3), anxiety (2), and mental health (1); no includes non-mental health (0) and missing (9).

*p <.001.

Table 8.

Frequency of use of specific social media platforms, regardless of MHI

	Facebook		Instagram		TikTok		Reddit		Discord		Pinterest		Twitter		Other[a]	
	n	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%	*n*	%
Never	113	36.9	10	3.3	102	33.3	172	57.1	166	54.2	82	26.8	193	63.1	49	16.0
Less than weekly	82	26.8	10	3.3	10	3.3	68	22.6	59	19.3	93	30.4	50	16.3	4	1.3
Weekly	23	7.5	9	2.9	7	2.3	20	6.6	10	3.3	39	12.7	10	3.3	1	0.3
Every few days	44	14.4	33	10.8	20	6.5	23	7.6	15	4.9	43	14.1	20	6.5	5	1.6
Daily	21	6.9	64	20.9	32	10.5	7	2.3	21	6.9	23	7.5	7	2.3	19	6.2
2-3 times per day	4	1.3	59	19.3	32	10.5	3	1.0	5	1.6	6	2.0	11	3.6	12	3.9
Multiple (>3) times daily	15	4.9	117	38.2	97	31.7	8	2.7	25	8.2	16	5.2	6	2.0	37	12.1
Missing	4	1.3	4	1.3	6	2.0	5	1.6	5	1.6	4	1.3	9	2.9	179	58.5

Note. N = 306

[a]Other includes ao3 or webtoon, chat, Crunchyroll, IRC, messenger, Not specified (NA; Never; shush; Any other social media), Quora, Snapchat, Spotify, Tumblr, Wechat, WhatsApp, YouTube

Table 9.

Social Media platforms used to access and interact with Online Mental Health Information

	Active		Passive	
	n	%	*n*	%
Facebook	11	3.6	31	10.1
Instagram	118	38.6	215	70.3
TikTok	111	36.3	166	54.2
Reddit	25	8.2	13	4.2
Discord	8	2.6	5	1.6
Pinterest	22	7.2	33	10.8
Twitter	9	2.9	20	6.5
Other	91	29.7	15	4.9
Google	50	16.34		
Google Scholar	1	0.33		
Quora	1	0.33		
Safari	6	1.96		
Spotify [b]	1	0.33		
Trevor Project	1	0.33		
Tumblr	1	0.33	1	0.3
Wikipedia	1	0.33		
YouTube	18	5.88	14	4.6
Not specified [a]	2	0.65		

Note. N = 306. Active refers to specifically seeking online MHI ("Which app(s) do you use to look for mental health information?"), Passive refers to seeing online MHI while scrolling ("Which app(s) show you mental health information while scrolling social media WITHOUT actively searching for it?"). Participants could select all that are applicable.

[a] Not specified includes: "apps that are designed for this purpose." "not a particular site but if anything doesn't look incredible and interesting i'll have a look."

[b] podcast love my girl jazz

Table 10.

Binary Regressions Regarding the Association Between Access and Interaction with Online Mental Health Information, MHL, and SWEMWBS Scores

Item	*B*	SE	Wald	*df*	*P*	Odds Ratio	95% CI
Access and Interaction with online MHI							
Follow Influencers regularly posting about MH	-0.01	-0.03	0.03	1.000	0.86	0.995	[.935, 1.058]
Ever looked up MHI online	-0.05	-0.05	0.79	1.000	0.38	0.956	[.864, 1.057]
Vignette							
Recognition[a]	-0.08	0.0	3.1	1.0	0.08	0.9	[.843, 1.010]

Note. *N* = 306.

[a] The MHL vignette and questions were adapted from Jorm et al (2007). Responses were manually coded in excel by the researcher and a post-graduate level psychology student researcher. Correct recognition for the vignette: yes includes the coded responses of social anxiety (3), anxiety (2), and mental health (1); no includes non-mental health (0) and missing (9).

Table 11.

Linear Regressions Regarding Association Between Access and Interaction with Online Mental Health Information and MHLS Scores

	B	*SE*	95% CI	ß	*t*	R Square	Durbin-Watson	F	*p* (F)	df
Access										
Frequency online	2.286	0.844	[.626, 3.947]	0.155	2.71	0.024	1.725	7.343	0.007	1, 298
Ever Looked Online	12.571	2.3	[8.044, 17.098]	0.301	5.465	0.091	1.855	29.861	<.001	1, 299
Interaction										
Active Interaction	0.966	0.646	[-.306, 2.238]	0.086	1.494	0.007	1.699	2.233	0.136	1, 300
Passive Interaction	1.009	0.467	[0.090, 1.928]	0.124	2.161	0.015	1.697	4.67	0.031	1, 300
Follow Influencers	6.806	1.407	[4.037, 9.575]	0.269	4.837	0.072	1.811	23.4	<.001	1, 301

Note. Each regression identified outliers, however subsequent regression analysis with those outliers removed did not show any significant change so the models have been reported with all data included.

Table 12.

Multiple Linear Regression regarding impact of access and interaction with online mental health information on MHLS scores

	B	*SE*	95% CI	ß	*t*	R Square	Durbin-Watson	F	*p* (F)	df
Active Interaction	-0.56	0.69	[-.440, 2.834]	-0.05	-0.82	0.16	1.89	10.71	0.41	5, 292
Passive Interaction	0.24	0.51	[-.769, 1.255]	0.03	0.47				0.64	
Frequency online	1.20	0.83	[-.440, 2.834]	0.08	1.44				0.15	
Ever looked online	10.66	2.30	[6.134, 15.190]	0.26	4.63				<.001	
Follow Influencers	5.97	1.51	[3.006, 8.935]	0.24	3.96				<.001	

5. Discussion

In brief, 10 of the 13 hypotheses were correct, with the remaining three hypotheses being partially correct. I underestimated the number of students who have looked up mental health information online, with 88% of participants reporting they had, compared to my conservative estimate of 70%. While I correctly hypothesised that young people were mostly seeing mental health posts by influencers, the second most common group was organisations, rather than people they know (e.g. friends or family) as I predicted. Finally, my hypothesis that the rainbow group would access and interact with MHI more often than the non-rainbow group was supported by only two of the three regression models but was supported by the post-hoc multiple regression analysis. This study provides important new information about how young people are interacting with mental health content online, as well as how this interaction with information on social media and online more broadly may influence their mental health literacy.

5.1 Research Question 1: Do MHL scores vary by rainbow status wellbeing scores?

Overall, the MHLS scores for the sample were comparable to those in previous studies, however there is no benchmarking or cut points for the MHLS that allow us to categorise the MHLS scores. The combined mean score for the sample on the MHLS is similar to the scores reported for a university student sample in Australia (O'Connor & Casey, 2015), post-graduate researchers (Moss et al., 2022) and medical school students in the UK (Marwood & Hearn, 2019). The mean scores for this study were higher than a university student sample in the UK.

The responses to the vignette-based questions indicate a high level of recognition, with most of the sample correctly identifying social anxiety or anxiety, and suggesting professional help was needed. This is an important finding as no other studies have looked at these conditions in AoNZ (Tissera & Tairi, 2020) and this result highlights that anxiety may be well recognised by AoNZ teens.

As introduced in the literature review, and discussed further below, the MHL literature has suffered from inconsistent definitions and measures which are unclear about the concept being

assessed or which aspects of the concept are actually being measured (Mansfield et al., 2020; Spiker & Hammer, 2019). This difficulty is exacerbated by the limited psychometric assessment or comparison of the measures in the literature (Kucera et al., 2023; Mansfield et al., 2020). In this study, I incorporated two common measures of MHL (the MHLS and vignette-based questions) to allow for broader comparisons with the extant research, as well as a comparison of the MHL level between the measures.

As suggested in hypothesis 1, the rainbow participants had significantly higher MHLS scores than their non-rainbow peers. Though there are very few studies to compare to in the literature, this supports the limited data we have suggesting rainbow communities have higher MHL than the general population (Ferlatte et al., 2021). A previous study using the MHLS (Gorczynski et al., 2017) found no significant differences in MHLS scores by sexuality, highlighting the need for further research in this area to allow for replication and comparison.

Given this limited research to date, explanations for this difference in MHL scores are scarce. Gendered socialisation and increased negative mental health experiences have been put forth as explanations for the increased MHL among women compared to men (Marwood & Hearn, 2019), and may also apply to many within the Rainbow sample in this study. Indeed, two of the previous studies investigated rainbow populations only, not comparing these to the non-rainbow majority populations and therefore not identifying or suggesting any explanations for the differences in MHL scores between these groups (Ferlatte et al., 2021; J. Wang et al., 2014). Additionally, as our Rainbow sample included participants who were diverse in sexuality and gender, our finding might indicate that gender diverse folks drove this difference in MHLS scores. Ferlatte et al. (2021) is the only study that has included gender minorities in MHL comparisons, finding cisgender men and transgender women had lower literacy levels than cisgender women, transgender men and non-binary folks. Further research disentangling these Rainbow subgroups is needed to investigate this possibility.

Contrary to my hypothesis, this study found no significant relationship between wellbeing scores and MHL. This finding is in line with a recent systematic review of 12 studies published

between 2011 and 2023 (Özparlak et al., 2023) which focussed on studies with young people (including both high school and university populations). The authors explained this finding by noting that current MHL measures do not assess knowledge on how to achieve and maintain good mental health (known as positive mental health literacy), despite this being included in the concept definition (Bjørnsen et al., 2019; Mansfield et al., 2020; Özparlak et al., 2023). Further research that incorporates measures of positive mental health literacy may clarify its role in wellbeing here.

Overall, the sample showed low wellbeing scores, indicative of mild depression or anxiety, (Shah et al., 2021; Warwick Medical School, 2015). This suggests the sample has particularly low wellbeing, notwithstanding that the benchmarking and norms for the SWEMWBS were undertaken with UK adults (aged 16+). This is in line with recent research warning that youth wellbeing is falling, with increasing proportions of young people experiencing distress and depressive symptoms (Fleming et al., 2020).

Predictors of lower wellbeing, such as identifying as female (Fleming et al., 2020; Shah et al., 2021) or Rainbow (Fenaughty, Sutcliffe, Fleming, et al., 2021; Veale et al., 2019), are overrepresented in this sample compared to the general population and may have contributed to the wellbeing scores in this study. Future studies could consider asking participants about current or historical mental health diagnoses to provide further context.

5.2 Research Question 2: How do AoNZ young people access and interact with MHI and are there group differences in these behaviours?

The young people in this sample are online every day, with 95% of the sample reporting being online daily or more often, and 72% reporting being online more than 3 times a day. This fits with the wider Aotearoa New Zealand context where 94% of the population are internet users, and 82% are active social media users (Kemp, 2021). This internet usage is also in line with US research showing 97% of teens are online every day, with 48% using the internet multiple times a day, and 46% of teens saying they are online ‘almost constantly’ (Pew Research Center, 2022).

Investigating the mental health information that young people are seeing and interacting with online is a novel area of research, and although this study provides interesting insights into the social media behaviour of young people in Aotearoa New Zealand, there remains significant questions arising from the responses we received.

5.2.1 How do young people see MHI online? (Hypothesis 3-8)

Most participants (88.6%) had previously looked up mental health information online (Hypothesis 3). This was higher than my conservative estimate of 70% and highlights how important it is for those working with young people to understand how and why young people are looking online for information about mental health. However, we did not ask about when or why young people are looking online. Previous research estimated up to 90% of young people attending professional consultations have looked up MHI on social media (Scott et al., 2022), but this study suggests this behaviour is even more pervasive, not just limited to those who are experiencing mental distress. Further research incorporating questions around when and why young people are accessing this information will provide important context here.

In addition to looking up MHI, almost all the participants had seen MHI while scrolling their social media feed and were more often passively seeing these posts as they scrolled rather than actively searching for it. Only 3.9% reported never seeing MHI, showing how pervasive this content is on social media today. Participants most commonly saw MHI posts on social media from influencers (67%), followed by mental health organisations (e.g., Youthline or Mental Health Foundation, 59.2%), and then people they know posting about their own mental health (50.7%) or reposting information from other accounts (37.3%). While young people often seeing posts from mental health organisations is promising, the study did not ask how young people categorise organisations as being mental health organisations, or which organisations these may be. Future research may benefit from incorporating questions around how young people identify mental health organisations or determine whether an organisation posting mental health content online is trustworthy or reliable.

My hypotheses relating to how young people are accessing and interacting with MHI on social media were correct and provide insights into the online behaviour of AoNZ teens. This survey confirms young people are coming across this information in their social media feeds and reinforces the need to investigate the kinds of information they are exposed to (e.g., via content analysis studies) and how such information may influence their thoughts and behaviour (e.g., via experimental studies). Knowing that young people are encountering mental health information online without searching for it also reinforces concerns around the potential triggering effects of some depictions of mental distress (including self-harm), the potential spread of misinformation about mental health and wellbeing, and the increasing challenge of self-diagnosis. We must understand the social media landscape, and how young people engage in it, to counteract misinformation and amplify correct information.

5.2.2 Where do they see MHI online? (Hypothesis 9)

As expected, most participants reported seeing, and looking for, MHI on Instagram and TikTok, which were also the two most used social media apps overall. The results of this study follows similar trends from the US, which has reported the skyrocketing popularity of TikTok and the downfall of Facebook among teens (Pew Research Center, 2022). Indeed, in this survey, where Instagram and TikTok are used daily or more by most participants (78.4% and 52.7% respectively), Facebook was used daily or more by only 13.1%, and Twitter only 7.9%.

Unclear understandings of what is classed as social media adds to these challenges. Given the speed at which social media platforms rise and fall, I selected the platforms named in the survey through a combination of recent research (e.g. Pretorius et al., 2022) as well as anecdotal information about social media use. For me, the applications listed in the survey reflected my idea of a social media app, and highlighted some applications that I overlooked as my definitions of social media appear to be different to the young people surveyed. For example, I did not include Snapchat in the survey, despite knowing this is a common app used by teens. I categorised Snapchat as an instant messaging-type app; a way to send image-based messages to one or more people. However,

Snapchat also includes a ‘Stories’ feature, where users can post an image as a story, and it will be visible to the users friends for 24 hours before it is automatically deleted (Moreau, 2024). This is similar to the stories features on Facebook, Instagram, TikTok and many others (West, 2021).

Similarly, I did not include YouTube in the named platforms. This is a particularly silly oversight given it fits all of the hallmarks of a social media platform including the ability to upload your own content, view content from others and react to others content through comments and likes, although it does not require you to make an account in order to search for or view videos (Aichner et al., 2021; Walker, 2021). Nevertheless, both YouTube and Snapchat were noted by participants in the survey as social media apps they use generally, as well as for mental health information.

Google was also named by 50 participants as an app used for MHI, and it is unclear whether its inclusion reflects a misunderstanding of the survey question, or a difference in how young people classify apps, particularly for the purposes of searching for information. Part of the rationale for this study was the anecdotal assertion that young people are increasingly searching social media for information rather than using tradition search engines. This has been supported by recent research in the US that 24% of people said they only, or primarily, use social media for searching online, and for Generation Z this was as high as 46% (Haan, 2024). This changing role of social media for young people further adds to the need to understand the MHI young people are exposed to on social media, as traditional websites which may rely on search engines to direct young people to them may need to embrace social media to retain relevance.

5.2.3 Online MHI contact - Group Differences (Hypothesis 10-11)

In hypothesising a relationship between MHL and wellbeing, rainbow status and online MHI, I was following a similar rationale inspired by the limited research available regarding rainbow young people online. That is, that rainbow young people spend more time online researching their experiences or searching for community with those in a similar situation (Craig et al., 2021; Schueller

et al., 2019), and that in doing so they would have learned more about mental health given the extensive information online about the mental health experiences of Rainbow young people.

My hypothesis that the rainbow group would access and interact with MHI more often than the non-rainbow group (H10) was partially correct, with the items relating to access (frequency online and ever looked up MH information online) showing significant group differences while there were no significant group differences for the interaction questions (measured by whether they follow influencers that share MHI, their frequency of active searching for MHI on social media and frequency of passive interaction/seeing MHI while browsing social media). This may reflect that while rainbow young people are looking online for information and support, they are not doing so through following influencers or looking for information on social media specifically. Importantly, almost all the rainbow participants had previously looked up MHI online highlighting how crucial it is that they find accurate information. These results follow the limited existing research suggesting rainbow folks are more likely to look online for mental health information and support (Craig et al., 2021; Schueller et al., 2019).

The data supports the hypothesis that lower wellbeing scores are associated with higher access to and interaction with online mental health information (H11). Those with better wellbeing, are therefore spending less time accessing and interacting with online MHI. This may reflect a pattern of those with lower wellbeing looking for mental health content online and on social media to improve their wellbeing or may reflect that those with lower wellbeing are simply online more, including looking at mental health information online. Indeed, this may reflect a bidirectional relationship as has previously been suggested in the literature (Granic et al., 2020; Vuorre et al., 2021). Certainly, the literature around the relationship between wellbeing and social media use more generally continues to report mixed findings with a recent review of the literature calling the associations between wellbeing and social media use “inherently complex and nuanced” (Valkenburg et al., 2022, p. 3).

5.3 Research Question 3: Does access to and interaction with online MHI predict MHL scores?

These regressions support the hypotheses that those with higher access or higher interaction with online MHI have higher MHL than those with lower access or interaction. While the regressions support the hypothesis that higher access or interaction with online MHI is associated with higher MHL, the data also supports the relationship between lower wellbeing and higher access and interaction with online MHI, but not the relationship between lower wellbeing and higher MHL. This suggests there may be additional variables at play and warrants further research. Recommendations for future research around these issues are outlined below.

5.4 Limitations

This study is limited by the self-selected, online sample. The sample is not representative in terms of gender identity or sexual orientation. Given the particularly low wellbeing of the sample, the wellbeing scores may also be reflective of the self-selected nature of the sample, with those with lower wellbeing potentially interested in this type of research given their own experiences of wellbeing or looking online for support. Similarly, the online nature of the sample may have increased the proportion of respondents with very high access and interaction with online social media than the broader adolescent population.

Specifically, the self-report gender suggests a predominantly female sample. The sample does not include gender as set grouping as this was not a target variable. As this research was more focused on rainbow status than gender, I elected to record gender through open questions, rather than collect through closed options and we did not compare the MHLS scores by gender identity. Nevertheless, 66% of the sample identified as female/girl/woman. This proportion of female respondents may contribute to the relatively high scores for the sample age, as in previous studies females have had significantly higher MHL than their male peers (Burns & Rapee, 2006; Coles et al., 2016; Cotton et al., 2006). Gender may have been an important variable that was omitted in these analyses. Future research would benefit from including additional variables in the regression model.

Although my original recruitment plan was designed to maximise the diversity of participants through partnering with schools, this was ultimately not possible. Multiple disruptions, and bad

timing, meant that schools were even less likely to agree to advertise to their students. Schools were also less likely to agree to participate in research with those they did not have a previous relationship with, highlighting the need for stronger relationships with schools or other trusted organisations before attempting recruitment. Finally, some schools identified issues with the content and targets of the study, specifically, the open approach to asking students about their sexuality and gender identity. While the principals did not provide specific details around their concerns, they advised they would be unable to distribute the survey without parental consent. This may reflect the increasingly politicised environment that surrounds rainbow issues, particularly gender identity.

Without school involvement, the participants were recruited using social media. Advertising was directed by age, and therefore included those who were the correct age, but were already at university or had left school for another reason (n = 75). These responses were captured, as they passed the eligibility test by age, but were removed before analysis. In hindsight, I can question if it was necessary to have such specific eligibility criteria, or whether the study would have been improved had I included those who were the within the targeted age-range but no longer at school. Education level, such as being at university compared to secondary school, may be a relevant factor to mental health literacy scores or wellbeing, given the different expectations on those who have moved on to tertiary education. Similarly, those who have moved into work may experience different stressors than those still engaged in education. Of course, the experiences of those at secondary school may already encapsulate a wide range of stressors including those who are already engaged in part-time employment or those with additional expectations and responsibilities to their families.

5.5 Recommendations

As highlighted in the discussion and limitations noted above, this project has highlighted key areas in need of further research:

5.5.1 Social Media

This study has highlighted the importance of understanding the social media landscape and how social media content may be influencing teenagers, particularly in understanding their own

mental health. As noted in the discussion above, this study did not consider the quality of content of the posts seen online. Existing research has looked at social media from a content perspective, investigating the posts and creators through analysis of social media posts (Chadee & Evans, 2021; Yeung et al., 2022). These studies provide valuable insight into the kinds of posts seen online but have been so far based on the top results when searching for specific terms on the platform. For example, Pretorius and colleagues (2022) compiled their list of mental health professionals as influencers using the search function on Instagram and TikTok and including those with over 100,000 followers. Similarly, Yeung et al. (2022) reviewed the content quality of videos related to ADHD by searching for #adhd in TikTok and selecting the top 100 videos by view count. This strategy allows for researchers to focus on videos that have the widest reach and are, presumably, the most likely to be seen by people looking for mental health related content.

However, when considering this from a specific consumer focus (e.g., wanting to consider the content that Rainbow teens may see) this strategy may not provide the content analysis we require. This also leaves the videos of smaller creators, such as young people whose posts are likely only viewed by those in their social circle, untested. Future research should consider how we can assess the quality of content being seen by specific groups by considering the influence of demographic features and the algorithm in the curation of a social media feed. For example, teens could forward posts from their feed, or a screenshot of them, to a research account, thus collecting posts from organic social media feeds.

Future research should also investigate the thoughts and reactions of young people to the posts in their feed. That is, how do young people judge and evaluate the content they see, particularly when those posts are providing information. This kind of study may require a broader approach, incorporating MHL with digital literacy, media literacy and social media literacy (Polanco-Levicán & Salvo-Garrido, 2022). Competency in these areas is integral for adolescents to critically consider the messages and information they are exposed to on social media, and likely varies by age as adolescents develop their decision-making capacities.

This study considered young people as consumers of online MHI, but not as creators. As noted by Scott et al. (Scott et al., 2022), there is a 'glaring gap' in the research surrounding young people as creators of MHI, as well as how young people engage with MHI created by other young people. In this study, 50% of respondents reported seeing mental health related posts from people they know posting about their own mental health, presumably at least some of whom are fellow adolescents. Future research will need to address this from multiple angles, including the types of posts young people are posting, how young people interpret and receive information in peer-created posts, and the impact of these posts on their peer relationships. For example, are young people posting about their mood or challenges with mental health, or also posting more generalised information about mental health and mental illness? If they are posting general information, are other young people fact-checking the information someone else posts?

Mental health influencers are an increasingly important area of research. As noted in this study, 67% of participants saw posts by influencers about mental health but we need to know the credentials of these influencers and the quality of the information posted. However, in this study, we do not know if the influencers discussed were posting occasionally about their own health or acting as mental health influencers posting predominantly about mental health information and issues. Further research should investigate the current landscape in AoNZ including identifying mental health influencers in AoNZ, categorising them by their credentials such as lived experience versus health professionals, assessing the videos/posts through content analysis for accuracy of MHI and comparing their average views and engagement.

Finally, further research should explore the knowledge and attitudes of clinicians (including psychologists/mental/medical professionals and health educators) towards social media and online MHI. This area incorporates the knowledge and attitudes of NZ clinicians regarding how people use and engage with MHI on social media, but also the personal knowledge and attitudes to social media, and associated online behaviour, of clinicians. This has important practical considerations for clinicians and may expose discrepancies between how clinicians expect young people to look for

information, and what we are seeing in this study. Clinician research may also extend to how clinicians view social media and how they approach social media and online MHI in their sessions with clients. Additionally, are there clinicians who engage with this kind of content online? What influences whether clinicians engage or not? How do clinicians feel about using social media to meet teens where they are, and provide evidence-based information to them? Further studies could explore how clinicians view the proposed advantages of using social media for mental health promotion and information sharing (e.g. Comp et al., 2021). These are important questions to consider for those providing mental health support in a world where young people are increasingly living their lives online.

5.5.2 Mental Health Literacy

As identified throughout this thesis, despite the prolific research undertaken over the past decade, MHL is in dire need of a clear theoretical definition or model. While there has been plenty of research measuring MHL of different populations, and intervention programmes designed and assessed, there has been little attempt to develop MHL as theory (Mansfield et al., 2020; Spiker & Hammer, 2019). Future research should focus on developing a theory or model of MHL which standardises the dimensions or constructs incorporated into MHL and how and why these variables are linked. A theory of MHL will overcome the current concerns about jingle-jangle fallacies and challenges with discriminant validity that have developed through construct proliferation, e.g. including stigma within the MHL construct rather than as a construct itself measured as an outcome (Kutcher et al., 2016; Spiker & Hammer, 2019). Part of this work should also address criticisms of MHL such as its mental ill health approach and reliance on diagnosis-specific measures (Mansfield et al., 2020; Spiker & Hammer, 2019).

Future research should further investigate the relationship between wellbeing and MHL. Logic dictates that those with higher MHL would have increased wellbeing, due to the understanding of factors that contribute to MHDs, and the treatment options and help-seeking pathways available to them. Indeed, MHL is said to be a significant determinant of mental health (Bjørnsen et al., 2019;

Jorm, 2012; Kutcher et al., 2016). Accordingly, this is the assumption the literature is predicated on, that by increasing MHL we can reduce the rates and severity of MHDs in the community. However, the way many young people have learned about MHL is through either direct or indirect experiences with mental ill health and likely decreases in their wellbeing. Thus, there may be a temporal factor to this relationship, with those first experiencing distress or poor wellbeing having low MHL, and both wellbeing and MHL increasing through the therapeutic process. This is a novel suggestion that has not been discussed or assessed in the literature.

This study acknowledged the gaps in the psychometric assessment of MHL measures to date. Many studies in the literature report MHL scores but have made no attempt to categorise them or provide cut-off points that indicate whether a score is “good” or “bad” or whether the person or group has passed or failed. While scores are compared between studies, with different groups noted as being better or worse than others, there is little practical understanding of what these scores mean or how to determine what score reflects adequate MHL or requires intervention. Future research should look to evaluate the psychometric properties of existing MHL measures and include norms or criterion-based scores that guide the use of MHL measures.

MHL is particularly understudied in important areas for Aotearoa New Zealand, specifically how culture influences MHL and the levels of MHL among Māori and Pacific peoples. With Māori and Pacific young people bearing the brunt of our ongoing mental health crisis, these populations are among the most in need of research and investment into their mental health knowledge and education. While this study focussed on Rainbow folks, future research should target ethnicity as a possible predictor of MHL. Such studies would benefit from incorporating culturally relevant conceptualizations of MH into study design, to prevent erroneously underreporting the MHL of communities who are less tied to Western ideas about health.

5.6 Conclusion

The participants in this study showed a high level of recognition for social anxiety or anxiety and appropriately identifying that professional help was needed. Additionally, the MHLS scores for

the sample were comparable to previous studies. Both results are promising given the lack of research into MHL in AoNZ samples.

This study has provided insight into how young people are engaging with mental health information on social media and supports the notion that social media is a common source of mental health information for AoNZ teens. As expected, the young people in this sample are online every day and mostly multiple times a day, with much of this time spent on social media. They report seeing mental health content weekly or more often, even without actively searching for it highlighting the importance of understanding the content being served to young people in AoNZ.

Rainbow young people were shown to be more likely to access online mental health information, though there was no significant group difference in their interaction with mental health content on social media. These results add to the growing literature exploring how rainbow young people search for support online, and how their online behaviours may differ from their non-rainbow peers.

This study also showed that lower wellbeing scores are associated with increased access and interaction with online and social media mental health content. While the relationship between wellbeing and social media use more generally remains murky, this study provides specific insight into mental health social media and online content.

Finally, this study investigated whether how young people use social media for mental health content impacts upon their mental health literacy. The results showed that higher access or interaction with online MHI predicted higher MHL than those with lower access or interaction. This is the first study connecting the way teens use social media and online mental health information to mental health literacy, providing an important avenue to consider how teens are developing their mental health literacy.

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Appendices

Appendix 1 – Ethics approval letter

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

25/05/2023

Dear: Siobhain McGehan

Re: Ethics Application - OM3 23/06 - Well, there's this TikTok: Adolescent Mental Health Literacy and Social Media Use.

Thank you for the above application that was considered by the Massey University Human Ethics Committee:

Ohu Matatika 3 at their meeting held on **Thursday, 2 March 2023**

On behalf of the Committee I am pleased to advise you that the ethics of your application are approved.

Approval is for three years. If this project has not been completed within three years from the date of this letter, reapproval must be requested.

If the nature, content, location, procedures or personnel of your approved application change, please advise the Secretary of the Committee.

Yours sincerely

Professor Craig Johnson
Chair, Human Ethics Chairs' Committee and Director (Research Ethics)

Research Ethics Office, Research and Enterprise
Massey University, Private Bag 11 222, Palmerston North, 4442, New Zealand T 06 951 6841; 06 95106840
E humanethics@massey.ac.nz; animalethics@massey.ac.nz; gtc@massey.ac.nz

Appendix 2 – Introduction Email to Schools

[BY EMAIL TO SCHOOL PRINCIPAL]

Kia ora

[whakawhanaungatanga statement as applicable]

My name is Siobhain McGehan and I am currently completing my Master of Arts (Psychology) at Massey University Te Kunenga ki Pūrehuroa. My research looks at what young people know about mental health and how they interact with mental health content online. This includes finding out the kind of content they are seeing, and whether they are actively looking or just passively seeing posts. I am also interested in whether those interacting with mental health content online have improved mental health literacy (knowledge and beliefs about mental health).

I am hoping that your school would assist with this project by allowing me to ask your students to participate in my survey. This is an important topic for us to understand in order to better support young people. Not only do young people spend so much time online, but we also know that young people often endure a long time between when they first experience symptoms of mental distress and when they ask for or receive help. We want to make sure that young people learn about their own mental health and access the information they need.

The survey also incorporates questions around the students' sexuality and gender, as part of my study is investigating if there are any group differences between rainbow students and their peers with regards to their access of mental health social media or mental health literacy.

I realise that schools are under more pressure than ever, and I hope to make your school's participation in this project as easy as possible. I have suggested below two options to present this study to your students, but I am happy to discuss alternatives if required.

Accordingly, I would like your agreement to:

> A: Introduce the survey through school assembly and posters for students to access the survey online at a time of their choosing.
>
> B: Provide digital sharing or newsletters to students, and posters in strategic locations (eg counselling office, psychology classes and diversity groups). Students complete the survey online at a time of their choosing.

In return for your students' participation, I or my supervisor would be happy to provide a brief presentation to your staff, students and/or parents. This presentation could be on the results of this survey, or it could provide wider information about youth mental health that would be useful for your school — just let us know how we could best contribute.

My supervisor, Dr Ilana Seager van Dyk is both a registered clinical psychologist (New Zealand, and New York) and senior lecturer in Clinical Psychology. She trained in the USA (Yale, Ohio State and UCLA) and returned home to Aotearoa in 2022. Like me, she is passionate about youth mental health and has a particular specialization in working with LGBTQ+ youth and their whānau. She would also be happy to speak to your staff or school community on LGBTQ+ topics if that would be useful.

This project has been reviewed and approved by the Massey University Human Ethics Ohu Matatika 3, Application OM3 23/06. If you have any concerns about the conduct of this research, please contact Dr Gerald Harrison, Chair, Massey University Human Ethics Ohu Matatika 3, telephone 06 356 9099 x 83570, email humanethics3@massey.ac.nz.

Thank you for taking the time to consider this request and I look forward to hearing from you.

Appendix 3 – Digital poster

Kia Ora!
We are interested in learning more about what rangatahi / young people know and believe about mental health and what they are seeing about mental health on social media .

We need people who are 16-19, attending state-school in Aotearoa, and fluent in english to complete an anonymous, 20 minute, online survey.
There is also an optional prize draw to win one of four $30 prezzy cards.

For more information or to access the survey go to https://tinyurl.com/SMMHLSurvey

Appendix 4 – Geographic split for Instagram advertising

Table A4.

Geographic split of views for the PrideLab Instagram Advertisement

Region	*n*	%
Auckland	8144	33.1%
Canterbury	3656	14.9%
Wellington	2760	11.2%
Waikato	2120	8.6%
Bay of Plenty	1768	7.2%
Manawatu - Wanganui	1200	4.9%
Otago	1136	4.6%
Hawke's Bay	1072	4.4%
Northland	592	2.4%
Taranaki	576	2.3%
Nelson	344	1.4%
Southland	328	1.3%
Tasman	288	1.2%
Marlborough	216	0.9%
Gisborne	192	0.8%
West Coast	136	0.6%
Unknown	48	0.2%
Total	24576	100%

Appendix 5 – Information sheet

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

Well, there's this TikTok: Adolescent Mental Health Literacy and Online Mental Health Messages

Kia ora!

I appreciate you considering participating in this survey. Please read through this information sheet carefully before deciding to go ahead with this survey. Thank you for your time.

About Me:

My name is Siobhain McGehan and I am currently completing my Master of Arts (Psychology) at Massey University Te Kunenga ki Pūrehuroa. This project is part of my thesis, which I need to complete in order to apply to become a Clinical Psychologist someday. I hope to be able to work with young people to support them with their mental health needs. In addition to my studies, I work with people with disabilities, and volunteer as a telephone counsellor for young people.

About the project:

I have been studying while trying to manage a healthy social media habit and noticed a lot more mental health content online over the last few years. This made me wonder whether young people/rangatahi are also seeing these posts, and what kind of messages you are receiving. I am also interested in what young people know about mental health and mental illness, which is called mental health literacy.

The project aims to learn how young people use social media to learn about mental health. I then want to understand whether the way young people use and interact with social media impacts their mental health literacy (knowledge and beliefs about mental health).

In addition, I am investigating whether there are differences in mental health literacy and social media use for rainbow young people compared to their peers.

Accordingly, I would like to invite you to complete the following anonymous survey.

What would you need to do?

I am inviting you to complete the following **brief anonymous online survey**.

- It will take approximately 20 minutes to complete
- The questions will ask about you (your age, gender, sexuality and ethnicity) and then ask about your well-being, what you know about mental health, your social media use and how you access mental health content online.

As the survey is anonymous, we will not collect any identifiable information from you with your survey answers. Even if you have received this invitation through your school, we will not know which school you have come from.

MASSEY UNIVERSITY
TE KUNENGA KI PŪREHUROA
UNIVERSITY OF NEW ZEALAND

In order to enter the prize draw for the prezzy cards, we will provide a link to a separate survey to complete with your contact details. These details will be kept entirely separate from your survey responses, and your identity will not be revealed in any reports, presentations, or other documentation.

Any identifiable information will be destroyed five years after the research finishes. Anonymous data will be kept indefinitely and may be shared with other researchers on request.

Participant's Rights

Completion and return of the questionnaire implies consent. You have the right to decline to answer any particular question.

If you feel like you need to speak to someone about anything raised in this survey, please reach out to:

youthline te ara taiohi whakatapua kia ora ai — Free call 0800 376 633 | Free text 234 7 days a week, 8am til late

Rainbow Youth – Online Web Chat support, available Monday-Friday, 3pm-5pm
https://ry.org.nz/online-support

What's Up 0800 942 8787 (for 5–18 year olds). Phone counselling is available Monday to Sunday, 11am-11pm. Online chat is available Monday to Sunday 11am-10.30pm.

Ethics

This project has been reviewed and approved by the Massey University Human Ethics Ohu Matatika 3, Application OM3 23/06. If you have any concerns about the conduct of this research, please contact Dr Gerald Harrison, Chair, Massey University Human Ethics Ohu Matatika 3, telephone 06 356 9099 x 83570, email humanethics3@massey.ac.nz.

Further Information available from:

Siobhain McGehan | Siobhain.McGehan.1@uni.massey.ac.nz

Ilana Seager van Dyk | I.SeagervanDyk@massey.ac.nz

Appendix 6 – Survey

Information sheet & consent

Well, there's this TikTok: Adolescent Mental Health Literacy and Online Mental Health Messages

Kia ora!

I appreciate you considering participating in this survey. Please read through this information sheet carefully before deciding to go ahead with this survey. Thank you for your time.

About Me: My name is Siobhain McGehan and I am currently completing my Master of Arts (Psychology) at Massey University Te Kunenga ki Pūrehuroa. This project is part of my thesis, which I need to complete in order to apply to become a Clinical Psychologist someday. I hope to be able to work with young people to support them with their mental health needs. In addition to my studies, I work with people with disabilities, and volunteer as a telephone counsellor for young people.

About the project: I have been studying while trying to manage a healthy social media habit and noticed a lot more mental health content online over the last few years. This made me wonder whether young people/rangatahi are also seeing these posts, and what kind of messages you are receiving. I am also interested in what young people know about mental health and mental illness, which is called mental health literacy.
The project aims to learn how young people use social media to learn about mental health. I then want to understand whether the way young people use and interact with social media impacts their mental health literacy (knowledge and beliefs about mental health). Accordingly, I would like to invite you to complete the following anonymous survey.

What would you need to do?
I am inviting you to complete the following brief anonymous online survey.

- It will take approximately 20 minutes to complete
- The questions will ask about you (your age, gender, sexuality and ethnicity) and then ask about your well-being, what you know about mental health, your social media use and how you access mental health content online.

As the survey is anonymous, we will not collect any identifiable information from you with your survey answers. Even if you have received this invitation through your school, we will not know which school you have come from.

In order to enter the prize draw for the prezzy cards, we will provide a link to a separate survey to complete with your contact

details. These details will be kept entirely separate from your survey responses, and your identity will not be revealed in any reports, presentations, or other documentation. Any identifiable information will be destroyed five years after the research finishes. De-identified data will be kept indefinitely and may be shared with other researchers on request.

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Completion and return of the questionnaire implies consent. You have the right to decline to answer any particular question.

If you feel like you need to speak to someone about anything raised in this survey, please reach out to:

youthline te ara takohi whakatapua kia ora ai Free call 0800 376 633 | Free text 234 7 days a week, 8am til late

Rainbow Youth – Online Web Chat support, available Monday-Friday, 3pm-5pm https://ry.org.nz/online-support

What's Up 0800 942 8787 (for 5–18 year olds). Phone counselling is available Monday to Sunday, 11am-11pm. Online chat is available Monday to Sunday 11am-10.30pm.

Ethics

This project has been reviewed and approved by the Massey University Human Ethics Ohu Matatika 3, Application OM3 23/06. If you have any concerns about the conduct of this research, please contact Dr Gerald Harrison, Chair, Massey University Human Ethics Ohu Matatika 3, telephone 06 356 9099 x 83570, email humanethics3@massey.ac.nz.

Further Information available from:

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Ilana Seager van Dyk | I.SeagervanDyk@massey.ac.nz

demographics

What is your age?

What school year level are you?

- Year 10

- ○ Year 11
- ○ Year 12
- ○ Year 13
- ○ University
- ○ Not in school

Which of the following ethnic groups do you belong to. Please select as many as apply to you.

- ☐ Pākehā / European
- ☐ Māori
- ☐ Pacific
- ☐ Asian
- ☐ Latin American/African/Middle Eastern
- ☐ My ethnicity is not listed (please describe) _____

LGBTQStatus

What is your sexual orientation?

_____

What is your gender?

_____

Are you intersex/do you have a variation of sex characteristics?

- ○ Yes, I am intersex/have a variation of sex characteristics
- ○ No, I am not intersex/have a variation of sex characteristics
- ○ I don't understand the question

When we describe who participated in our study, which of these **sexual orientation**-related categories would you like us to include you in?

- ○ A Rainbow category (usually refers to people who identify as lesbian, gay, bisexual, pansexual, takatapui, or some other non-heterosexual sexual orientation)
- ○ A heterosexual/straight category (usually refers to people who are attracted exclusively to others of a different gender)
- ○ Neither Rainbow nor heterosexual/straight describe me because: _____

- Unsure because: [ ]

When we describe who participated in our study, which of these **gender**-related categories would you like us to include you in?

- A trans/transgender category (usually refers to people who were given a gender and/or sex label at birth that does not accurately represent them)
- A cisgender category (usually refers to people who are the same gender and/or sex they were assigned at birth)
- Neither cisgender nor transgender describe me because: [ ]
- Unsure because: [ ]

And which of these other **gender**-related categories would you like us to include you in?

- Binary (someone who identifies as completely a man/male or woman/female)
- Nonbinary (someone who has an identity other than completely woman/female or man/male)
- Neither binary nor nonbinary describe me because: [ ]
- Unsure because: [ ]

AccessMHProfessionals

Have you ever SOUGHT professional help for mental health challenges in the past? For example, have you ever tried to see a psychologist/counsellor/doctor for anxiety, depression, or something else?

- Yes
- No
- Don't know

Have you ever RECEIVED professional help for mental health challenges in the past? For example, have you ever tried to see a psychologist/counsellor/doctor for anxiety, depression, or something else?

- Yes
- No
- Don't know

Wellbeing

Please select the box that best describes your experience over the last 2 weeks

	None of the time	Some of the time	Rarely	Often	All of the time
I've been feeling optimistic about the future	○	○	○	○	○
I've been feeling useful	○	○	○	○	○
I've been feeling relaxed	○	○	○	○	○
I've been dealing with problems well	○	○	○	○	○
I've been thinking clearly	○	○	○	○	○
I've been feeling close to people	○	○	○	○	○
I've been able to make up my own mind about things	○	○	○	○	○

Select the response under each category which best reflects the way you are feeling

Wairua

- ○ I feel that my spiritual health is extremely good at present.
- ○ I feel that my spiritual health is good at present.
- ○ I feel that my spiritual health is just okay at present.
- ○ I feel that my spiritual health is not good at present.
- ○ I feel that my spiritual health is very bad at present.

Tinana

- ○ I feel that my physical health is extremely good at present.
- ○ I feel that my physical health is good at present.
- ○ I feel that my physical health is just okay at present.
- ○ I feel that my physical health is not good at present.
- ○ I feel that my physical health is very bad at present.

Hinengaro

- ○ I feel that my mental health is extremely good at present.
- ○ I feel that my mental health is good at present.
- ○ I feel that my mental health is just okay at present.
- ○ I feel that my mental health is not good at present.
- ○ I feel that my mental health is very bad at present.

Whānau

- I feel that my relationships with my whānau are extremely good at present.
- I feel that my relationships with my whānau are good at present.
- I feel that my relationships with my whānau are just okay at present.
- I feel that my relationships with my whānau are not good at present.
- I feel that my relationships with my whānau are very bad at present.

Vignette

Sam is a 15-year-old living at home with their parents. Since starting at a new school last year, Sam has become even more shy than usual and has made only one friend. Sam would really like to make more friends but is scared of doing or saying something embarrassing when around others. Although Sam's work is OK, Sam rarely says a word in class and becomes incredibly nervous, trembles, blushes, and feels like vomiting if asked to answer a question or speak in front of the class. At home, Sam is quite talkative with family, but becomes quiet if new people come over. Sam never answers the phone and refuses to attend social gatherings. Sam knows these fears are unreasonable, but can't seem to control them and finds them really upsetting.

In five words or less, what do you think is the matter with Sam?

If Sam was your friend, how worried would you be about Sam's overall emotional well-being?

1 (not worried)	2	3	4 (extremely worried)
O	O	O	O

How long do you think it will take for Sam to feel better?

1-2 days	1 week	1 month	A few months	More than a few months
O	O	O	O	O

Do you think Sam needs help from another person to cope with these problems?

- Yes (please describe who you think Sam needs help from)
- No
- Uncertain

On the previous page, you described Sam's problems as "${q://QID20/ChoiceTextEntryValue}". Which parts of Sam's story made you think this?

[We have included a copy of Sam's story below for your reference]

Sam is a 15-year-old living at home with their parents. Since starting at a new school last year, Sam has become even more shy than usual and has made only one friend. Sam would really like to make more friends but is scared of doing or saying something embarrassing when around others. Although Sam's work is OK, Sam rarely says a word in class and becomes incredibly nervous, trembles, blushes, and feels like vomiting if asked to answer a question or speak in front of the class. At home, Sam is quite talkative with family, but becomes quiet if new people come over. Sam never answers the phone and refuses to attend social gatherings. Sam knows these fears are unreasonable, but can't seem to control them and finds them really upsetting.

MHLSa

The purpose of these questions is to gain an understanding of your knowledge of various aspects of mental health. When responding, please use the following scale:

Very unlikely = I am certain that it is NOT likely	**Unlikely =** I think it is unlikely but am not certain	**Likely =** I think it is likely but am not certain	**Very Likely =** I am certain that it IS very likely

If someone became extremely nervous or anxious in one or more situations with other people (e.g., a party) or performance situations (e.g., presenting at a meeting) in which they were afraid of being evaluated by others and that they would act in a way that was humiliating or feel embarrassed, then to what extent do you think it is likely they have Social Phobia or Social Anxiety Disorder?

If someone experienced excessive worry about a number of events or activities where this level of concern was not warranted, had difficulty controlling this worry and had physical symptoms such as having tense

muscles and feeling fatigued, then to what extent do you think it is likely they have Generalised Anxiety Disorder?

If someone experienced a low mood for two or more weeks, had a loss of pleasure or interest in their normal activities and experienced changes in their appetite and sleep, then to what extent do you think it is likely they have Major Depressive Disorder?

To what extent do you think it is likely that Personality Disorders are a category of mental illness?

To what extent do you think it is likely that Dysthymia is a disorder?

To what extent do you think it is likely that the diagnosis of Agoraphobia includes anxiety about situations where escape may be difficult or embarrassing?

To what extent do you think it is likely that the diagnosis of Bipolar Disorder includes experiencing periods of elevated (i.e., high) and periods of depressed (i.e., low) mood?

To what extent do you think it is likely that the diagnosis of Drug Dependence includes physical and psychological tolerance of the drug (i.e., require more of the drug to get the same effect)?

To what extent do you think it is likely that in general in New Zealand, women are MORE likely to experience a mental illness of any kind compared to men

To what extent do you think it is likely that in general, in New Zealand, men are MORE likely to experience an anxiety disorder compared to women

MHLSb

The options for the next few questions have changed slightly. When responding, please use the following scale:

Very Unhelpful = I am certain that it is NOT likely	**Unhelpful =** I think it is unlikely but am not certain	**Helpful =** I think it is likely but am not certain	**Very Helpful =** I am certain that it IS very likely

To what extent do you think it would be helpful for someone to improve their quality of sleep if they were having difficulties managing their emotions (e.g., becoming very anxious or depressed)?

To what extent do you think it would be helpful for someone to avoid all activities or situations that made them feel anxious if they were having difficulties managing their emotions?

MHLSc

The purpose of these questions is to gain an understanding of your knowledge of various aspects of mental health. When responding, please use the following scale:

Very unlikely = I am certain that it is NOT likely	**Unlikely =** I think it is unlikely but am not certain	**Likely =** I think it is likely but am not certain	**Very Likely =** I am certain that it IS very likely

To what extent do you think it is likely that Cognitive Behaviour Therapy (CBT) is a therapy based on challenging negative thoughts and increasing helpful behaviours?

Mental health professionals are bound by confidentiality; however there are certain conditions under which this does not apply. To what extent do you think it is likely that the following is a condition that would allow

a mental health professional to break confidentiality:

If you are at immediate risk of harm to yourself or others

if your problem is not life-threatening and they want to assist others to better support you

MHLSd

Please indicate to what extent you agree with the following statements

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
I am confident that I know where to seek information about mental illness	○	○	○	○	○
I am confident using technology (e.g., computer, telephone) to seek information about mental illness	○	○	○	○	○
I am confident attending face to face appointments to seek information about mental illness (e.g., seeing the GP)	○	○	○	○	○
I am confident I have access to resources (e.g., GP, internet, friends) that I can use to seek information about mental illness	○	○	○	○	○

Please indicate to what extent you agree with the following statements

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
People with a mental illness could snap out if it if they wanted	○	○	○	○	○
A mental illness is a sign of personal weakness	○	○	○	○	○
A mental illness is not a real medical illness	○	○	○	○	○
People with a mental illness are dangerous	○	○	○	○	○

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
It is best to avoid people with a mental illness so that you don't develop this problem	○	○	○	○	○

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
If I had a mental illness I would not tell anyone	○	○	○	○	○
Seeing a mental health professional means you are not strong enough to manage your own difficulties	○	○	○	○	○
If I had a mental illness, I would not seek help from a mental health professional	○	○	○	○	○
I believe treatment for a mental illness, provided by a mental health professional, would not be effective	○	○	○	○	○

	Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree

Please indicate to what extent you agree with the following statements

	Definitely unwilling	Probably unwilling	Neither unwilling or willing	Probably willing	Definitely willing
How willing would you be to move next door to someone with a mental illness?	○	○	○	○	○
How willing would you be to spend an evening socialising with someone with a mental illness?	○	○	○	○	○
How willing would you be to make friends with someone with a mental illness?	○	○	○	○	○
How willing would you be to have someone with a mental illness start working closely with you on a job?	○	○	○	○	○

	Definitely unwilling	Probably unwilling	Neither unwilling or willing	Probably willing	Definitely willing
How willing would you be to have someone with a mental illness marry into your family?	○	○	○	○	○

	Definitely unwilling	Probably unwilling	Neither unwilling or willing	Probably willing	Definitely willing
How willing would you be to vote for a politician if you knew they had suffered a mental illness?	○	○	○	○	○
How willing would you be to employ someone if you knew they had a mental illness?	○	○	○	○	○

Social Media Use

How often do you go online, including using social media, accessing the internet, communicating with friends and gaming?

Never ○ Less than weekly ○ Weekly ○ Every few days ○ Daily ○ Two to three times per day ○ Multiple (>3) times daily ○

Have you ever looked up information relating to mental health online (including web searches and social media?)

Yes ○ No ○

How often do you use the following social media platforms?

	Never	Less than weekly	Weekly	Every few days	Daily	Two to three times per day	Multiple (>3) times daily
Facebook	○	○	○	○	○	○	○
Instagram	○	○	○	○	○	○	○
TikTok	○	○	○	○	○	○	○
Reddit	○	○	○	○	○	○	○
Discord	○	○	○	○	○	○	○
Pinterest	○	○	○	○	○	○	○
Twitter	○	○	○	○	○	○	○
Other (Please state)	○	○	○	○	○	○	○

Do you follow any organisations or influencers that regularly post about mental health?

○ Yes

- [ ] No

How often do you go to social media specifically to look for mental health information?

Never	Less than weekly	Weekly	Every few days	Daily	Two to three times per day	Multiple (>3) times daily
○	○	○	○	○	○	○

Which app(s) do you use to look for mental health information?

Please select any that apply.

- [ ] Facebook
- [ ] Instagram
- [ ] TikTok
- [ ] Reddit
- [ ] Discord
- [ ] Pinterest
- [ ] Twitter
- [ ] Other (Please state) _____

How often are you shown mental health content while scrolling social media WITHOUT actively searching for it?

Never	Less than weekly	Weekly	Every few days	Daily	Two to three times per day	Multiple (>3) times daily
○	○	○	○	○	○	○

Which app(s) show you mental health information while scrolling social media WITHOUT actively searching for it??

Please select any that apply.

- [ ] Facebook
- [ ] Instagram
- [ ] TikTok
- [ ] Reddit
- [ ] Discord
- [ ] Pinterest
- [ ] Twitter
- [ ] Other (Please state) _____

When you see posts about mental health in your feed, who have they been posted by?

Please select any that apply.

- [ ] Mental Health Organisations (eg. Youthline, Mental Health Foundation)
- [ ] Non-Mental Health Organisations/Brands (e.g., ASB posting about Mental Health Awareness Week)
- [ ] Influencers/Celebrities
- [ ] People you know posting about their own mental health
- [ ] People you know reposting from other accounts
- [ ] Other (please describe)

When you see posts about mental health in your feed, what kinds of posts do you see or interact with?

(please select all that apply)

- [ ] Personal Stories
- [ ] Awareness campaigns eg. Mental Health Awareness Week, Pink Shirt Day
- [ ] Information about symptoms or specific mental illness (e.g. depression or anxiety)
- [ ] Information about places to get help
- [ ] Information about the mental health of specific groups (e.g. LGBTQIA+ or other groups)
- [ ] Tips for maintaining improving or maintaining good mental health (e.g. self care suggestions)
- [ ] Other (please describe)

What are some specific examples of websites, influencers, etc. that you use to access information? (please provide the platform and the handle for influencers – e.g., TikTok – Jazz Thornton

PrizeSummaryLink

To enter the prize draw or receive a summary of results, please select YES.

You will be directed to a separate survey to complete with your email address.

- ○ Yes

○ No

Appendix 7 - Short Warwick-Edinburgh Mental Well-being Scale Licence receipt

Gmail Siobhain McGehan <siobhain.mcgehan@gmail.com>

Submission (ID: 580030628) receipt for the submission of /fac/sci/med/research/platform/wemwbs/using/non-commercial-licence-registration

no-reply@warwick.ac.uk <no-reply@warwick.ac.uk> Fri, May 19, 2023 at 1:30 PM
To: Siobhain.McGehan.1@uni.massey.ac.nz

Thank you for completing the registration for a Licence to use WEMWBS for non-commercial purposes.
You now have access to the scales and the associated resources here on our website: https://warwick.ac.uk/wemwbs/using/register/resources
We suggest you bookmark this page for future reference.
The information declared on your Registration Form is documented below. Please retain a copy of this email as a record of your Licence together with the Terms and Conditions you have accepted.
https://warwick.ac.uk/wemwbs/using/non-commercial-licence-registration/shrink-wrap_licence_-wemwbs_non-_commercial_v3_8.9.20.pdf.
If you have any questions please contact us via email:
wemwbslicence@warwick.ac.uk

Question: Type of use
Answer:
Survey

Question: If other, please specify
Answer:
Note this is for a Masters level research project.

Question: Type of intervention (if applicable) *Tick all that apply*
Answer:
Mental health promotion/mental health education eg mental health literacy, school based programmes

Question: If other, please specify
Answer:

Question: Field of Use
(Tick all that apply)
Answer:
University or college

Question: Preferred version of WEMWBS
(Note – both versions of WEMWBS can be used under a single licence)
Answer:
SWEMWBS - Shortened 7 item scale

Question: Age of Participants (*Tick all that apply*)
Answer:
11-17
18-64

Question: How many participants are you planning to use WEMWBS with? (Scale of use)
Answer:
251-500

Question: Start Date
Answer:
30/06/2023

Question: End Date
Answer:
30/11/2023

Question: Territories of Use: In which geographical areas will you be using WEMWBS? *(tick all that apply)*
Answer:
Oceania

Question: In which language(s) are you planning to use WEMWBS? *Tick all that apply* Please note that we may not be able to offer a translation into every language you require
Answer:
English

Question: If other, please specify
Answer:

Question: Organisation name
Answer:
Massey University

Question: Type of organisation
Answer:
University

Question: If other, please specify

Answer:

Question: Size of Organisation (no. of employees)
Answer:
501-5000

Question: Organisation Address
Answer:
Massey University, Private Bag 11 222
Palmerston North, 4442, New Zealand

Question: Country of Organisation
Answer:
New Zealand

Question: Website
Answer:

Question: Contact Name
Answer:
Siobhain McGehan

Question: Job Title
Answer:
Graduate Student

Question: If other, please specify
Answer:

Question: Email
Answer:
Siobhain.McGehan.1@uni.massey.ac.nz

Question: I have read and agreed to the terms of the Non-Commercial Licence
Please print and retain a copy for your reference
Answer:
Yes

Question: I agree to my contact details being shared with third parties for the purposes of product development of WEMWBS
Answer:
Yes